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CHAMBERS'S EDUCATIONAL COURSE—EDITED
BY W. AND R. CHAMBERS.

FIRST BOOK OF DRAWING;

BEING

EXERCISES FOR CHILDREN AND YOUNG PERSONS

ON THE

SLATE AND BLACK BOARD.

EDINBURGH:
WILLIAM AND ROBERT CHAMBERS;
W. S. ORR AND COMPANY, LONDON; W. CURRY JUNIOR AND
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PREFACE.

The utility of Drawing, as a department of School Instruction, though acknowledged by all who have given much reflection to Theoretical Education, is not by any means a familiar idea to the bulk of the community. It may therefore be proper, in this place, to state the grounds on which reflecting persons have arrived at the conclusion, that children of every grade should be made acquainted to a greater or less extent with the art of Drawing.

The faculties employed in the imitative arts are possessed, in a certain degree, by all persons. Some possess these faculties in so high a degree, as to become fitted to exercise them as a profession, for the gratification of mankind at large. In others, they are manifested so moderately, that a protracted effort to make such persons become tolerable draughtsmen, would only be labour thrown away. The majority, however, are so far endowed, as to be able, when instructed, to delineate any simple object, and to enjoy much pleasure from higher delineations produced by others.

Considered with reference to those who possess the faculties for design in a high degree of power, an universal practice of elementary drawing at school is calculated to have precisely that effect which was perhaps the greatest good that flowed from the imperfect education hitherto prevalent —it must at least awaken great power where it exists, and, furnishing it with the means of going onward to higher grades of instruction, secure the benefit of its ultimate exercise for the community. And not only are we thus to ensure that no great artist remains undeveloped, but we are also to bring forward many less degrees of qualification, such as would in vain perhaps essay excellence in the higher walks of art, but are of incalculable value in subserviency to certain branches of manufacture.

We believe, that, with few exceptions, children are fond of making efforts in Drawing. Furnished with a black-lead pencil and sheet of paper, or with a slate and slate-pen, they are delighted to scribble according as their fancy suggests, or to copy the toy-pictures which are presented for their amusement. Followed up methodically, and according to a routine of lessons which we shall attempt to point out, these infant aspirations may lead to the developement of much valuable talent, that might otherwise have remained altogether dormant and useless.

Independently of realising any expectations of this nature, instructions in the art of Drawing will fulfil an important end in education. The exercises will, in the first place, afford much pleasure and recreation of a harmless kind to the child; if pursued with increasing interest, they will gradually inculcate a perception and love of the beautiful, both in nature and in art; divert the mind from the contemplation of grovelling objects; discipline the eye and hand in a most useful branch of study; and, at the very least, enable the pupil during the course of his life to form a much more clear judgment on matters of *size*, *figure*, and *mechanical design*, than if he had received no such instructions.

For these or other reasons, Drawing is an almost indispensable requisite in elementary education, whether carried on at home or in school; and on this account, the present Primer has been prepared, and is humbly offered as an aid in carrying forward the business of instruction, either under the direction of the parent or teacher. As will be observed, it only attempts to convey directions for the very simplest lessons and exercises on the slate or black board, and leaves all exact rules of the art, as respects the management of perspective, to the advanced work on the subject which is already published.

EDINBURGH, *July* 10, 1840.

FIRST BOOK OF DRAWING.

DIRECTIONS FOR THE TEACHER.

The apparatus required to teach drawing is very unexpensive. Let each pupil be provided with a slate, and a slate-pen cut to a point; also a small piece of sponge wherewith to wipe and clean the slate when necessary. Do not allow any child to wipe the slate with his hand with moisture from the mouth, for this begins an offensive uncleanly habit, which may last through life. The sponge should be washed daily.

A sheet of paper, and a softish black-lead pencil, may be adopted in preference to a slate and slate-pen, but they are less economical, and therefore need not be used till an advance has been made in the lessons.

In schools where there is a young class to be taught, each pupil must be provided with a slate, slate-pen, and sponge, and the slate be placed on the sloping bench before him. It is a good plan to sink the slates in the bench, so as to lessen the chance of being broken. In a conspicuous situation in front of the class, either upon a wall, or on a stand, let there be hung up a wooden board measuring four feet square. The board must be smooth, painted a deep black colour, and without any visible seams. In some instances, the mid parts of the walls, all round, are plastered with mastic, and painted black, an arrangement which for many purposes is preferable to that of the black board; nevertheless, the board such as is here described, will in most cases be found sufficient. The materials for drawing on the board are, a piece of pointed chalk, a long straight edge of wood, a foot-rule, and a pair of large compasses. The best compasses are those made of wood, measuring at least eighteen inches in length of limb. One limb should be suited to hold a piece of chalk. By means of the straight edge and foot-rule, lines may be drawn and their respective lengths tested, while the compasses will be of service in describing curves, circles, and other figures.

In some continental schools where rigid accuracy is enforced, a boy somewhat advanced in his lessons stands at the black board, and from the book in his hand copies a figure upon it. The pupils in their seats observe the motions of his hand, and, following him slowly and according to their best judgment, they copy the figure from the board upon their slates. The principle of this practice, which we wish to see adopted and followed, is, first, to teach the art in the simplest possible manner and at the least expense; and, second, to give freedom of hand or execution. The child, it will be observed, commences with the slate and slate-pen, and having got over the initiatory difficulties and gained a little confidence, he is promoted to the board. Here copying figures in the first instance, and afterwards working from his improved taste and imitative faculties, he acquires a free, bold style of delineation, without which the power of drawing remains stiff and spiritless. In many cases it may not be convenient for the teacher or an advanced pupil to exhibit figures on the board, and therefore the pupil may copy direct from the book, precisely as if he were receiving instructions at home.

To commence, in whatever manner, place the pupil fairly before his slate, and cause him to draw perfectly straight lines, of which there are examples in No. 1. The lines must be drawn with the hand alone, that is, without any assistance from squares or rollers. The lines should in this easy manner, but with as much steadiness as possible, be drawn horizontally, perpendicularly, and obliquely; in short, in all directions that may be thought proper, and their accuracy may be tested with the instruments.

Being tolerably perfect in straight lines, we advance to bends or curves, as shown in No. 2. Explain that all lines whatsoever used in drawing, are either straight, or curved, or a modification of either; and point out how much more beautiful is the appearance and effect of a curve in comparison with a straight line. The bending of boughs in trees, or of stems in flowers, the serpentine winding of rivers, the convolutions of figures in dancing, the rounded forms of animals, all afford examples of the beautiful or elegant in curvilinear form. If the pupil be too young, or too slightly instructed, to appreciate this idea of the beautiful, it should be afterwards explained in connexion with flower-drawing, and be repeatedly noticed throughout the subsequent lessons. It is a frequent complaint with respect to the ordinary course of intellectual instruction, that it makes no adequate provision for inculcating just perceptions of the beautiful, and we therefore beg to draw the attention of teachers to the subject. They must lose no opportunity of contrasting beautiful with ugly or unshapely forms, and of showing that the one, while as easily produced as the other, is much more pleasing to the eye.

We now come to the drawing of objects, beginning with those of the simplest forms, as delineated in Nos. 3, 4, 5, and 6. In these and other figures, it will be observed that some of the lines are thin and others thick, the thin lines indicating the parts of the object which are in the light, and the thick ones indicating those which are in the shade. Point out how it is possible to represent a solid object—such as a block of stone or a house—on a flat surface, by means of a due mixture or arrangement of thin and thick lines or marks, and by giving some of them an inclination in a particular direction.

With the figures from Nos. 7 to 10, and, if necessary, with Nos. 18 and 19, which are farther on and a little more intricate, the pupil should be instructed in drawing coarse outline objects, possessing a degree of perspective, and bearing the rudimentary character of subjects of greater complication of parts. Take, for example, the bridges in No. 9. Here it is seen that strong outlines mark the objects in the foreground or nearest the eye, while the hills, which are observed beneath the arches, being lightly and diminutively sketched, appear to be at some distance. This enforces the idea that the effect of remoteness is produced not only by light strokes, but by diminishing or lessening the parts which recede. We should say to the pupil—see how the houses of a street seem to diminish in size according to their distance from us: the houses which are near appear in their proper size, but those at a distance look quite small. Thus there must be gradual diminution, in proportion as there is a gradual receding of the object.

From No. 11 to No. 17, there are examples of exercises in the drawing of familiar objects or utensils. This usually yields much pleasure to the beginner, and excites his imagination to discover objects which he may sketch in a similar style. Let this fancy be liberally indulged. Desire him to draw the outlines of a cup, vase, drinking glass, basin, book, hammer, axe, desk, chair, nail, candlestick, box, &c. Having drawn them in a front view, then put them in a different attitude so as to express an end, a side, a corner, or any other point of view. Drawing of objects in this manner from nature and not from paper, may be called a great step in advance, and is really the practical commencement of the art.

While about this stage of advancement, and while the mind is awakening to the power of expressing objects by means of various lines of a light and dark character, invite attention to the method in which a person is able to draw a subject from its appearance or from memory. It may be done in something like the following terms:—

When we see, for example, a chair standing on the floor, we observe its shape or figure, its line of back, seat, legs, and all other parts about it. We then take a pencil, and bending the mind intensely on the form of the chair, try to define all the lines of the object on the paper or board. The more perfectly that the hand can obey the direction of the mind while bent in thought on the object, so will the drawing be more true in all its details.

The pupil, therefore, must be taught to call up the whole power of his mind respecting the appearance of an object, when he wishes to represent it by a drawing. On this, indeed, may be said to rest the fundamental principle of delineation in all its branches. No one can possibly attain even a mediocrity in the art, who does not, less or more, possess this power of recalling images to the mind, and of training his hand to act in strict conjunction with its dictates. The hand is only the instrument employed by the imitative faculty, and can do nothing useful without the strong concurrence of the will. Accomplishment in penmanship, and every other art in which design or figure is an element, is founded on this fundamental basis.

We now proceed to the drawing of flowers, stems of plants, and portions of trees, of which there are a few simple examples from No. 20 to 27. Plant and flower drawing is a valuable branch of the art, and is particularly suitable for females. The course of instruction should not be confined to the examples here given, but be extended to exercises on all the elegant objects of this kind which are ready at hand. Any flower growing in a pot on the window-sill, any tree or bush that presents itself, or any shrub or blade from a garden, may be copied. On the correct imitation of these objects from nature, is founded the art of designing carvings in architecture and carpentry, mouldings for plaster-work, and patterns for lace, paper-hangings, carpets, and other objects of taste.

From plants we proceed to the sketching of animals, such as dogs, cats, swine, rabbits, horses, goats, sheep, birds, or other creatures which are familiar to observation, and of which a few examples are given from No. 28

to 35. Next, the pupil may advance to the drawing of faces and human figures, but this only, in a great measure, as an amusement; for a correct method of delineating these objects in their various forms and attitudes, is not to be gained without the most patient study of models and living figures, and may very properly be delayed till a more advanced period.

We next refer to the exercises in drawing houses and sectional plans, also maps, or outlines of pieces of country, as exemplified in Nos. 42 and 43. Exercises of this nature, for which copies for lessons now hang round most school-rooms, are of considerable use in giving correct notions of planning and mapping, and enabling a person to draw the figure of any house or piece of property with which he may be connected. The drawing of maps is found to be one of the best methods of acquiring an accurate knowledge of geography, and is carried to a considerable extent in some of the best seminaries of instruction in Scotland.

It is necessary to add, with respect to drawing plans of houses, or maps of fields and countries, that the pupil should be taught to measure and compute dimensions in height, length, and breadth. This is to be done in the first place by a foot-rule, or a diminished scale of inches and fractional parts, prepared for the purpose; but afterwards, and when a little skilled in these computations, he must learn to *guess*, or measure by the eye, the dimensions of the object on which he is engaged, and then to draw it, preserving the just proportions of the several parts. This is a kind of exercise which will largely contribute to cultivate the perceptive faculties of pupils, and make them useful to themselves in many of the common occupations of life.

The first, or purely elementary course of lessons, will properly terminate with exercises in drawing with the hand alone a variety of simple mathematical figures, such as circles, squares, parallelograms, &c. (No. 44.) These may be tried again and again, to give precision of hand and eye, or till the figures approach so near perfect accuracy in form as to stand the test of measurement by the compasses.

If the pupils, whether boys or girls, be designed for industrial employments in which taste in drawing ornamental figures is required, they will now proceed to a course of exercises in designing and drawing patterns such as are exemplified from No. 45 to No. 48. In the performance of this task, they will, as already mentioned, make use of the knowledge of flower drawing which they have previously acquired. By possessing this knowledge, they have now only to exercise their faculties in combining and arranging whole or fractional parts of those straight or curved-line figures which they have become acquainted with, or which their aroused fancy may suggest. In doing so, let them be instructed to avoid any approach to confusion in the designs, to give all the lines with an easy sweeping effect, so as to express what is called *spirit*, and to cultivate at the same time simplicity and chasteness. The patterns which we have thought proper to insert are less or more characteristic of different styles, and the exercises upon them are intended to lead to originality of conception over a wider range of subjects.

We conclude these brief directions by mentioning in the most emphatic manner, that, further than mere amusement for the moment, the exercises on this or any other elementary work on drawing will be of no use whatever, unless the pupil *do the things with his own hand, and seek for originals in actual objects before him.*

In these few general directions, it has not been thought necessary to offer any advice as to when the pupil should take his turn at the black board, as both the frequency and length of his exercises upon it must depend on the state of advancement and other circumstances connected with the business of the school. It need only be recollected that exercises to a reasonable extent on the board are absolutely indispensable for giving that *freedom of hand* which we have already adverted to, and for teaching the art of handling compasses, measuring distances, and other matters of practical utility.

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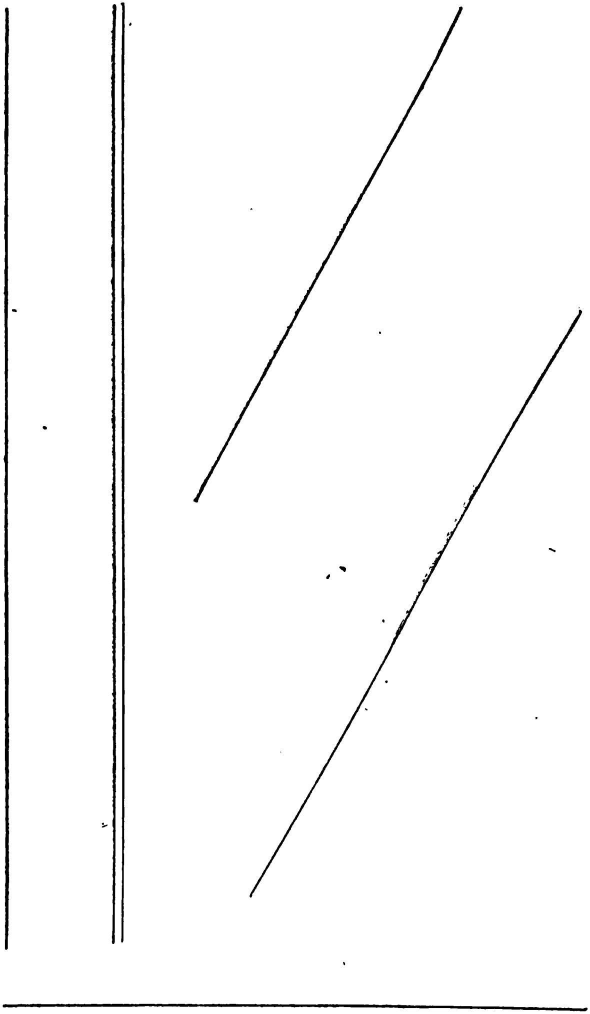

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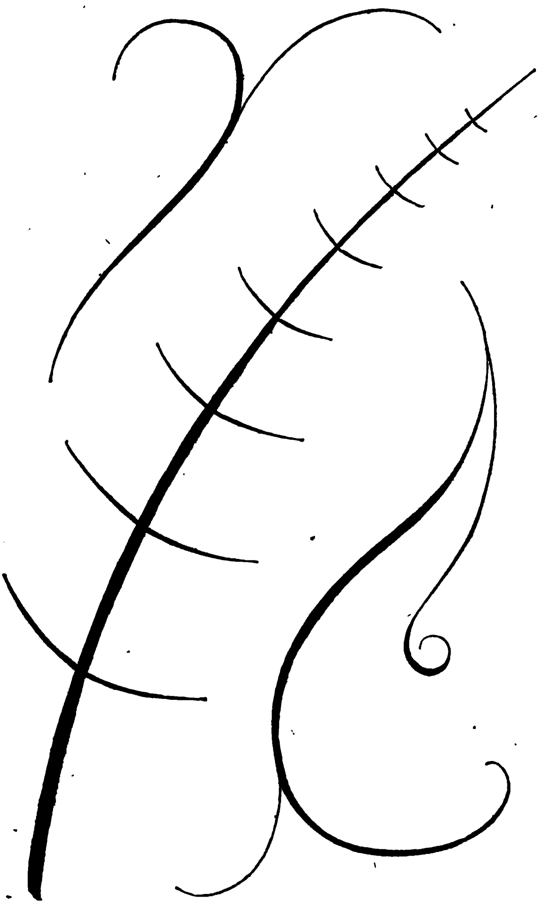

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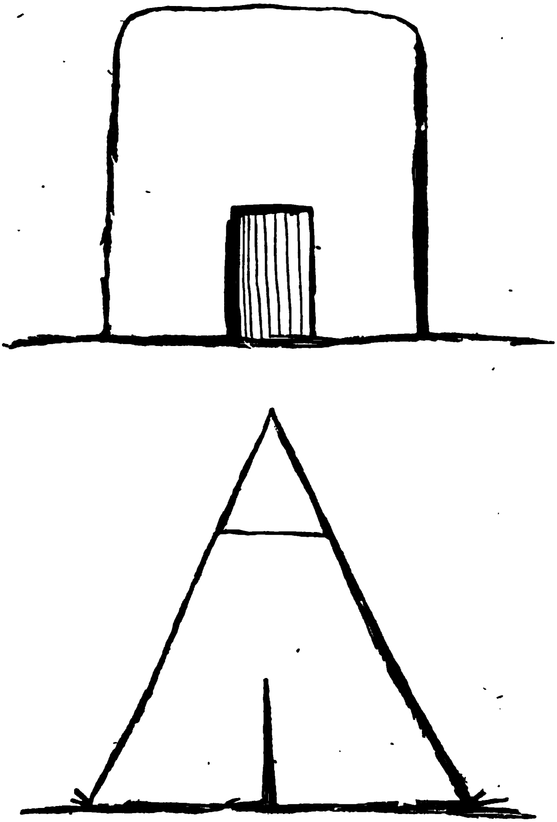

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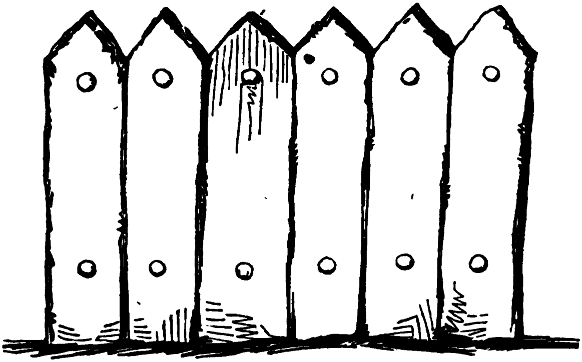

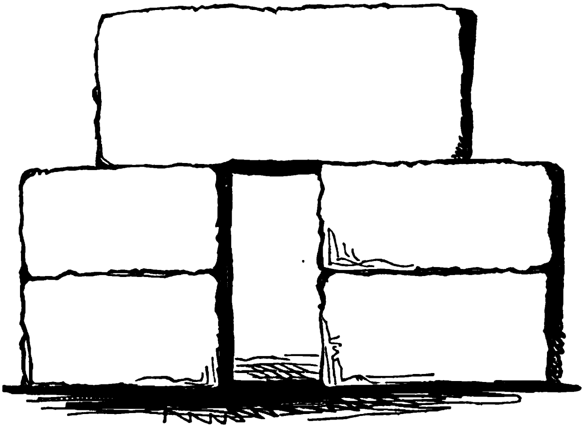

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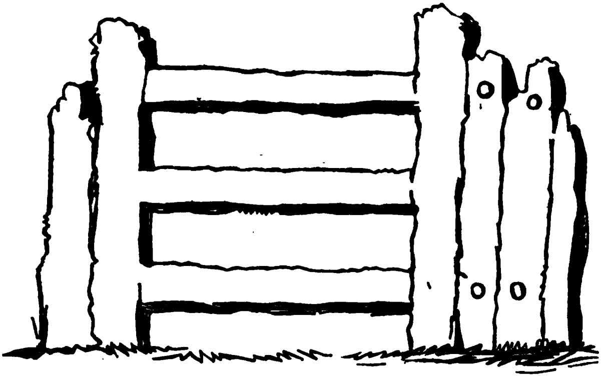

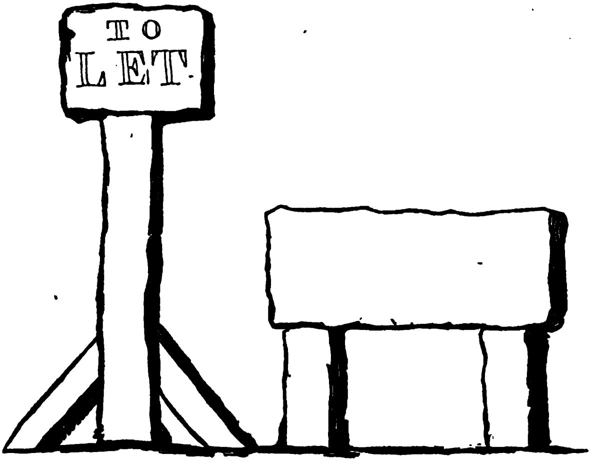

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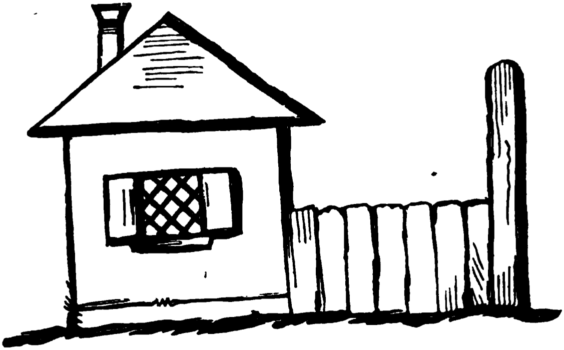

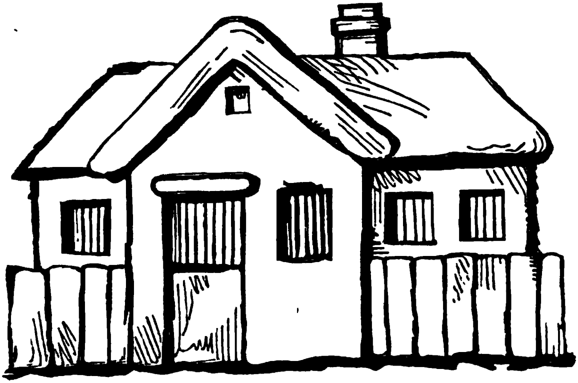

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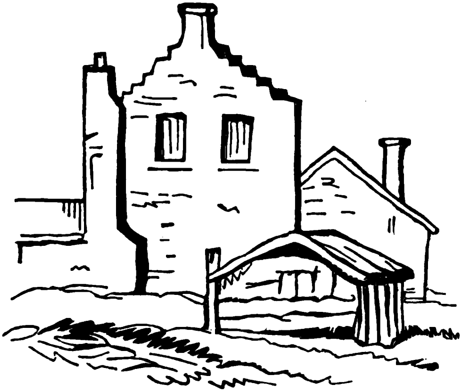

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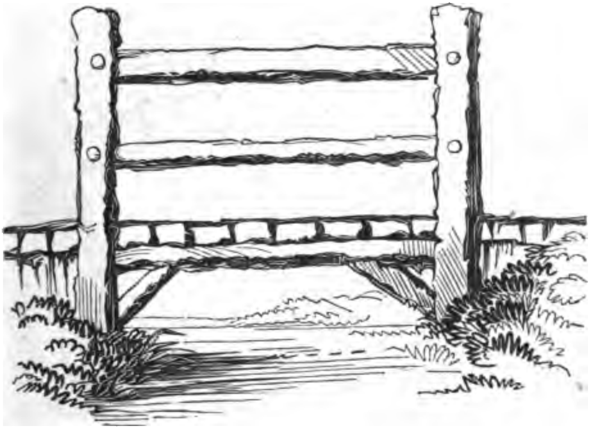

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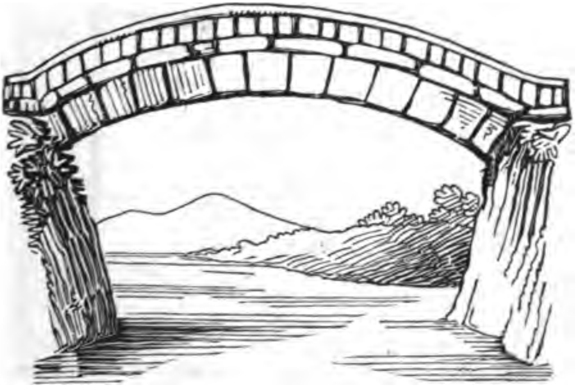

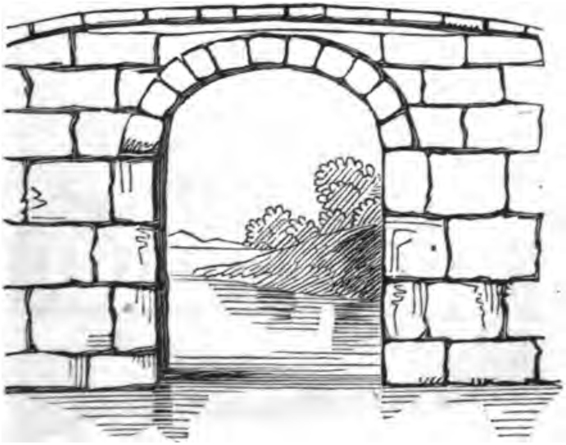

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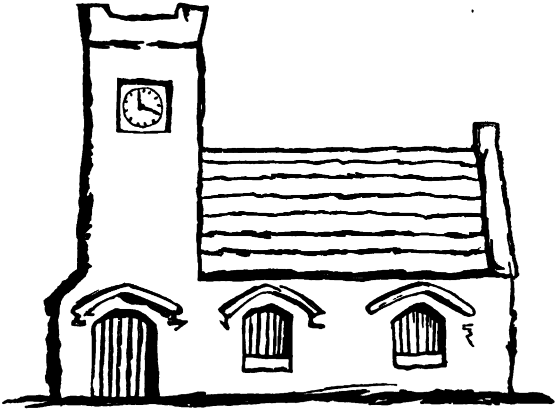

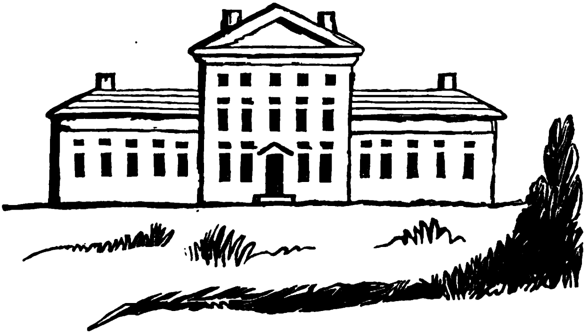

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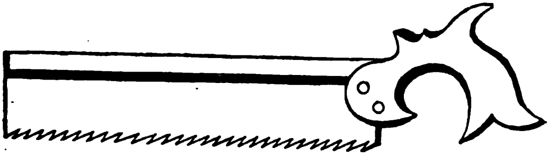

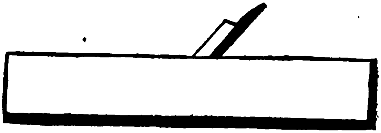

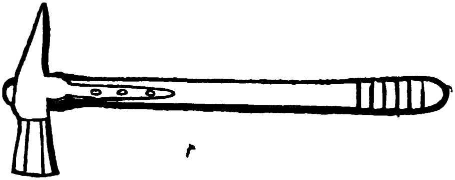

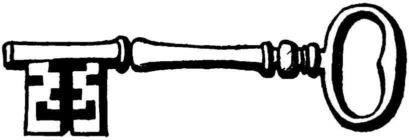

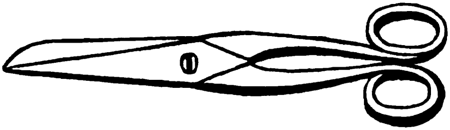

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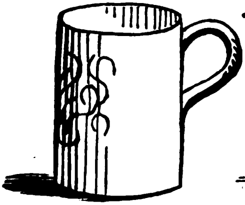

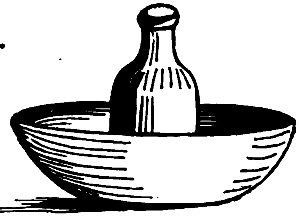

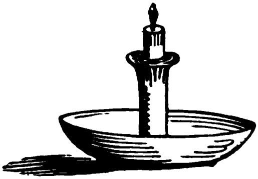

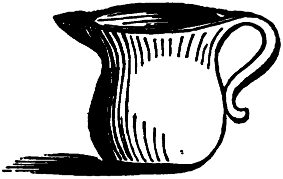

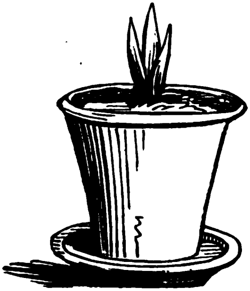

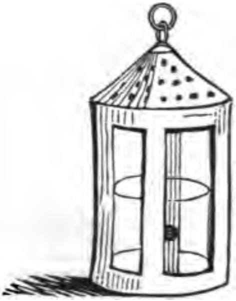

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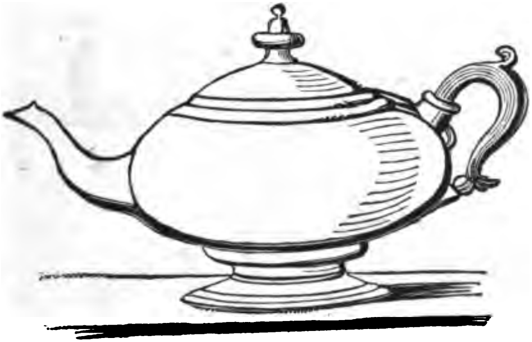

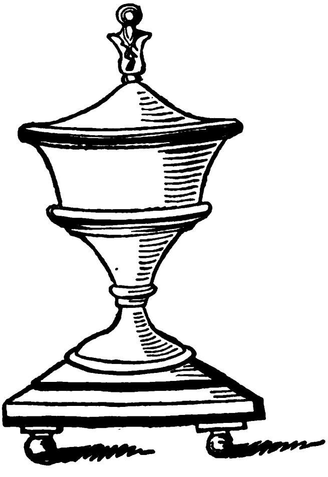

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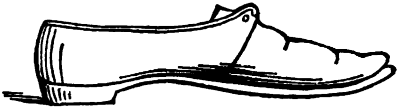

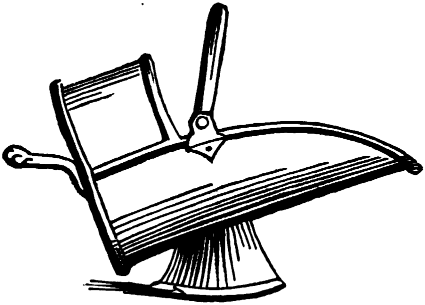

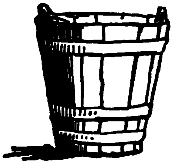

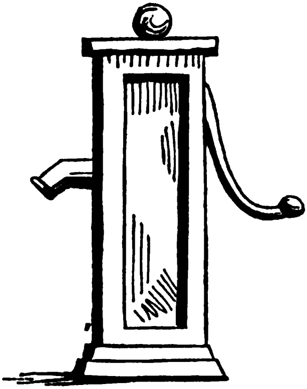

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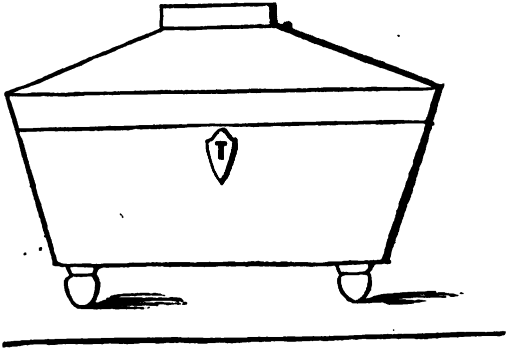

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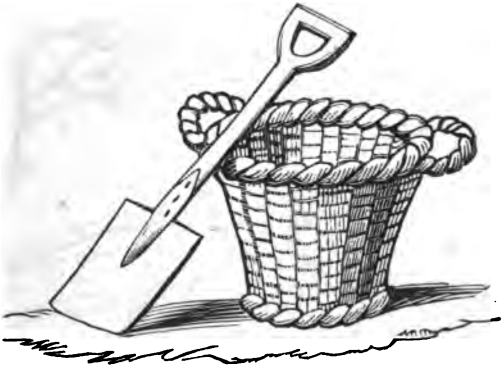

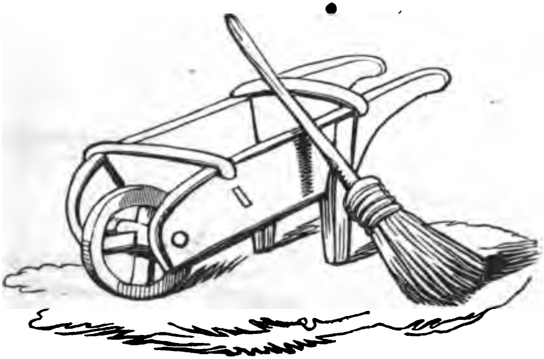

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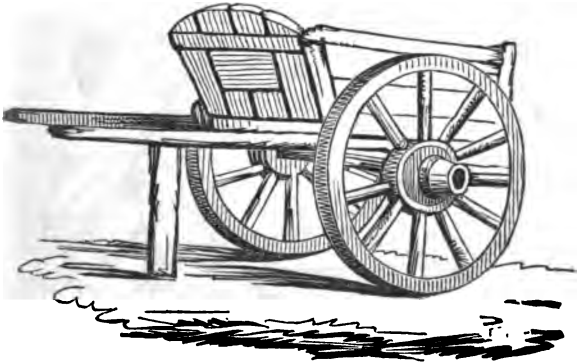

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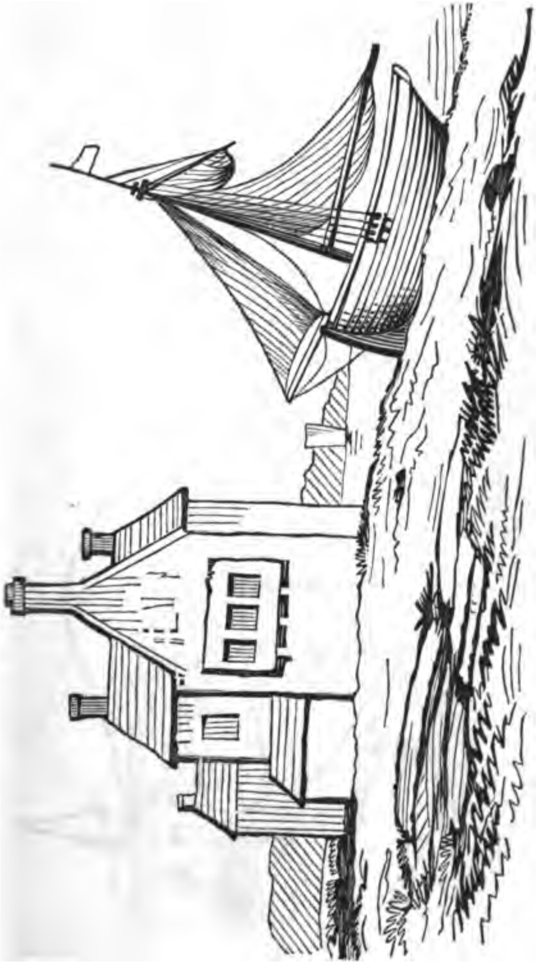

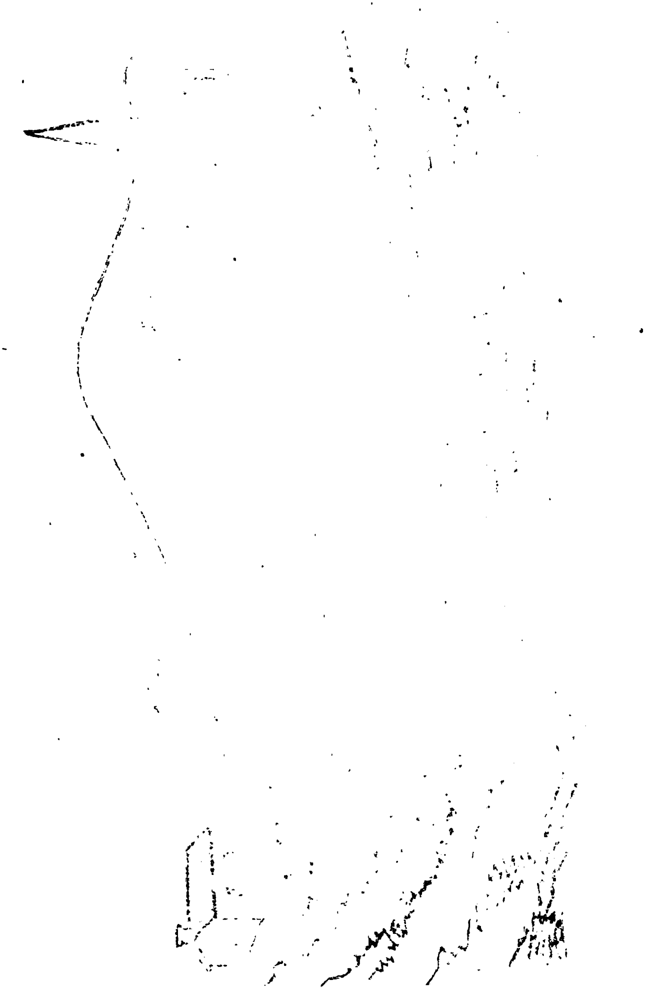

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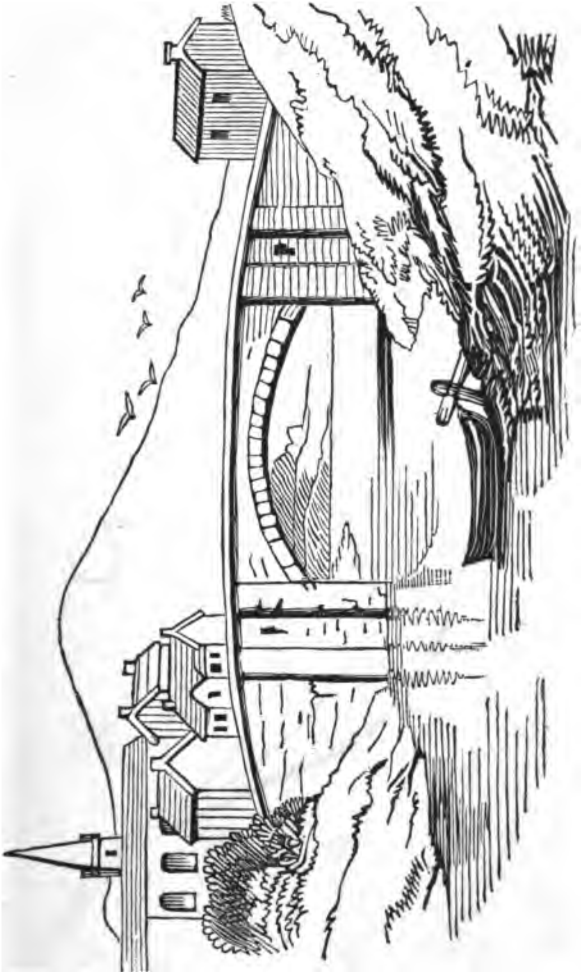

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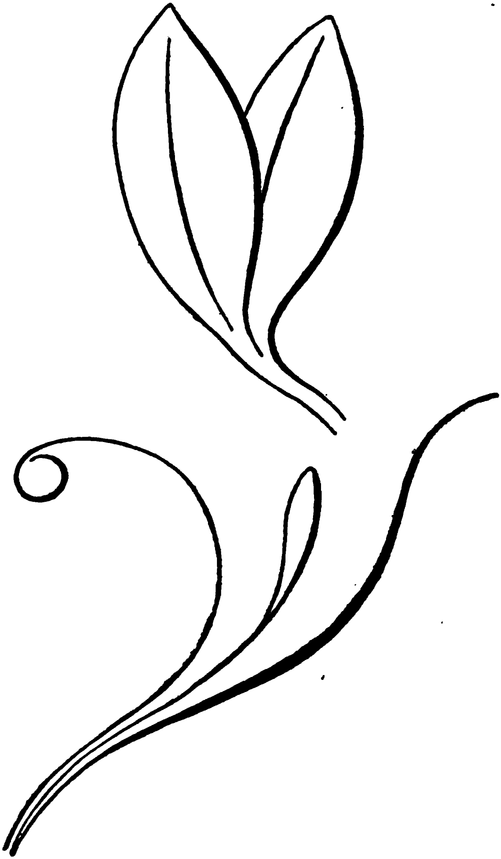

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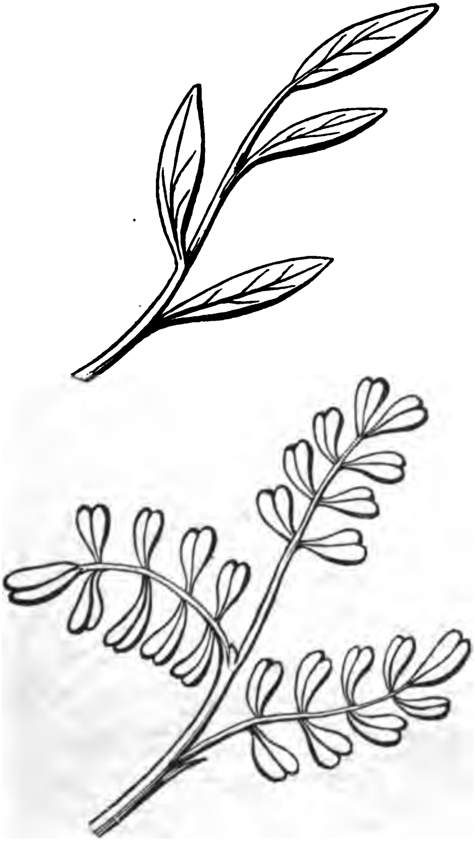

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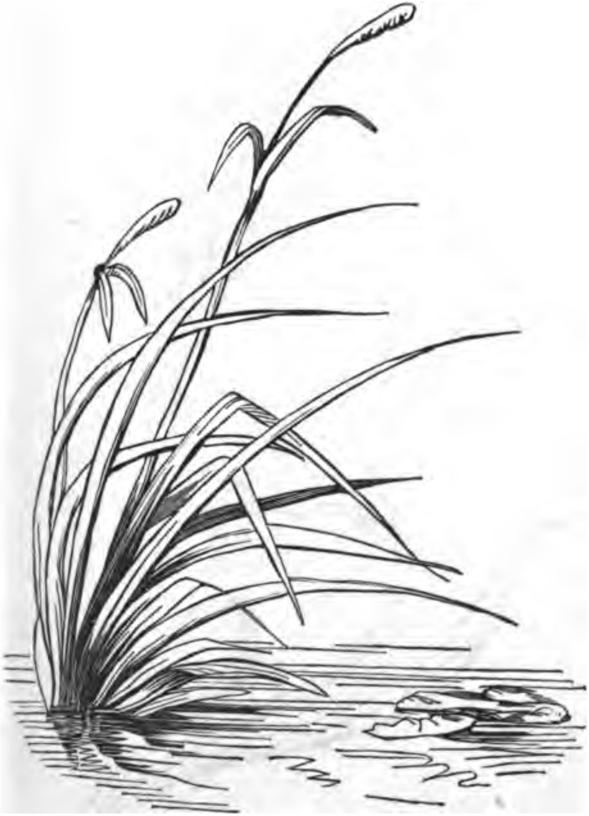

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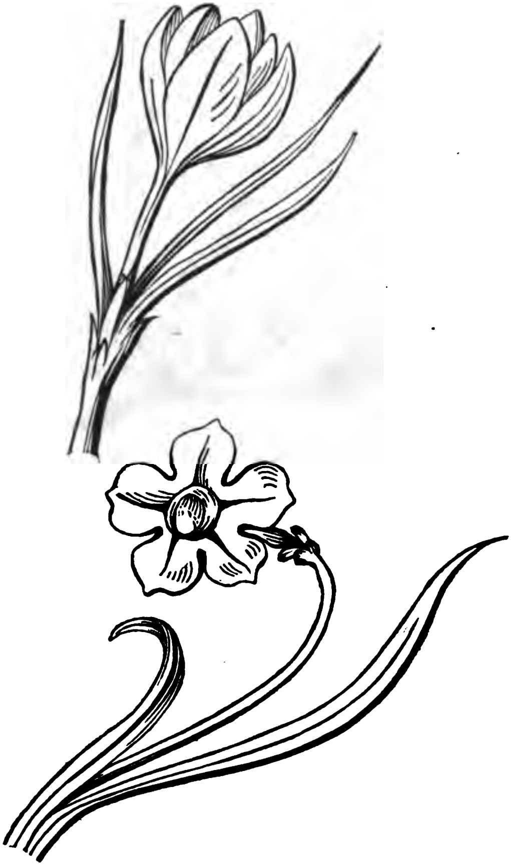

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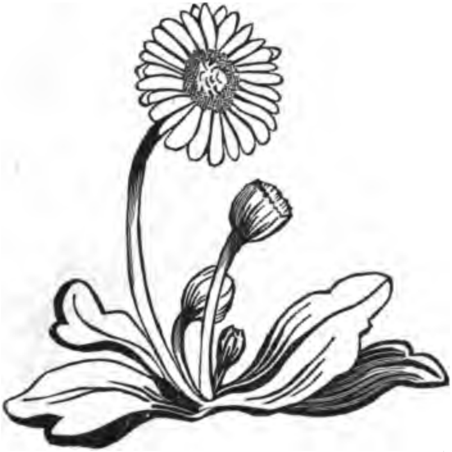

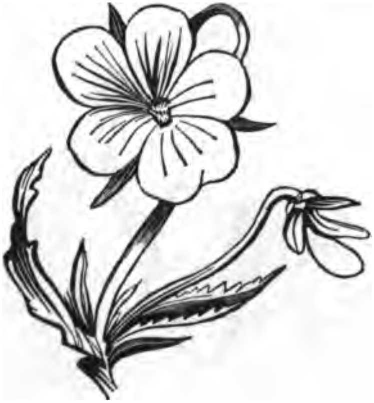

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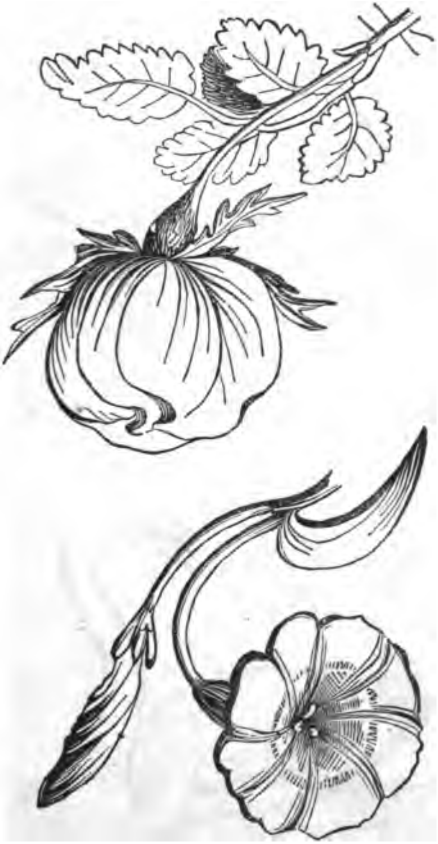

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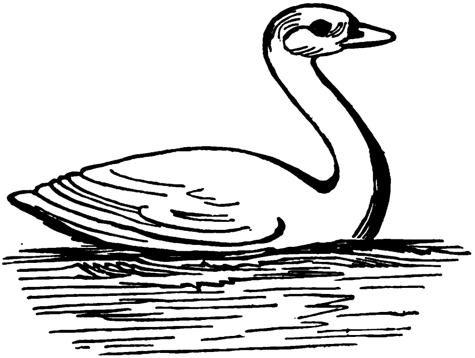

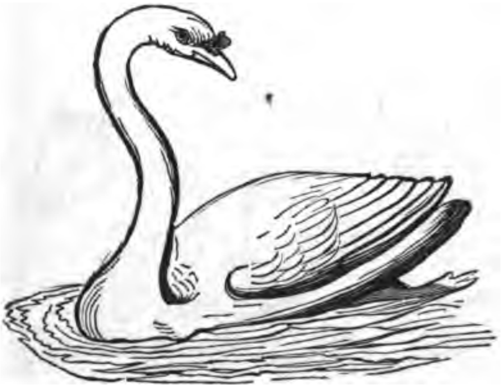

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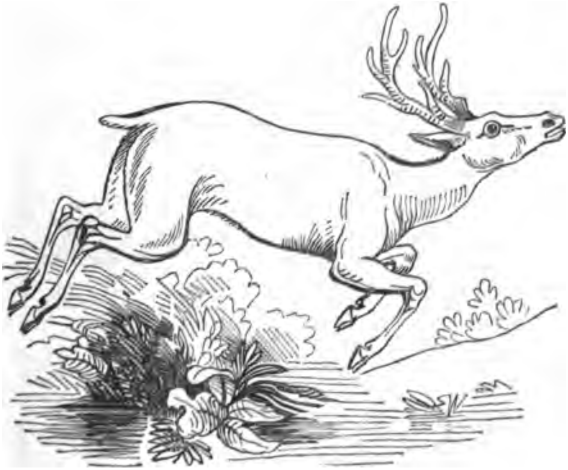

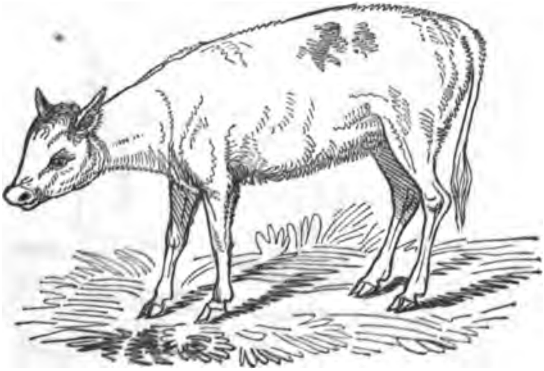

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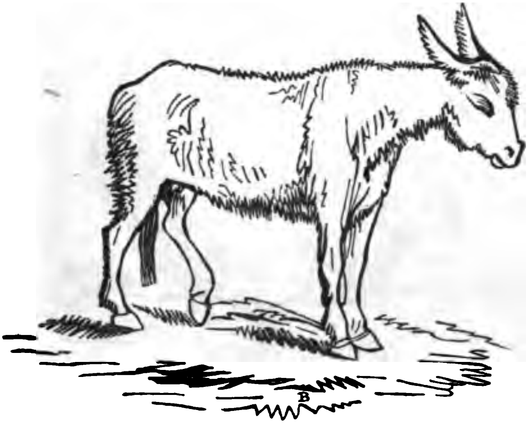

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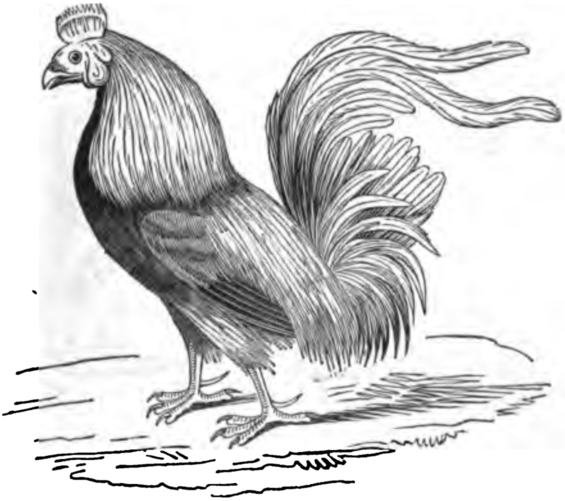

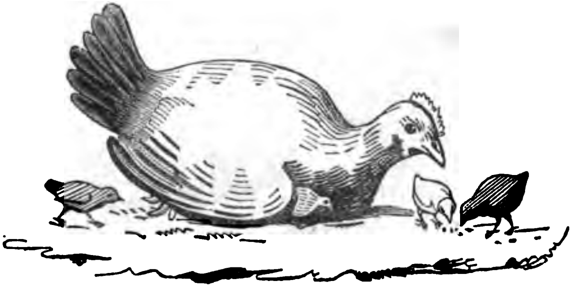

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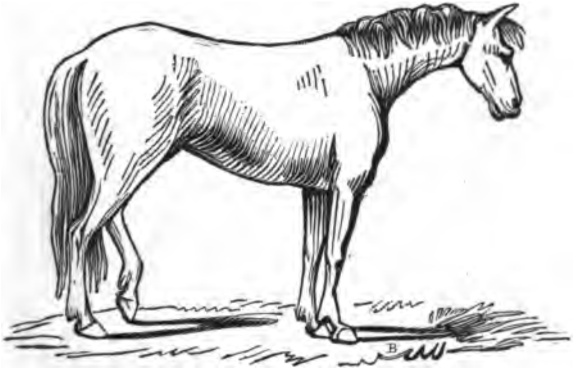

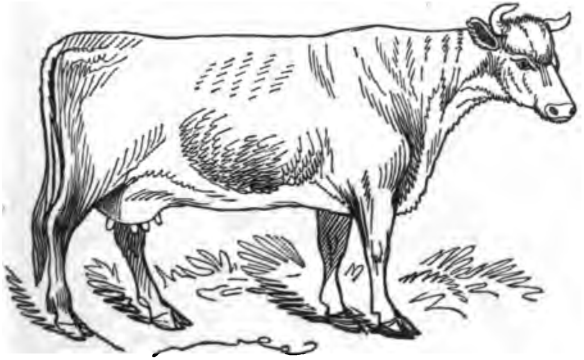

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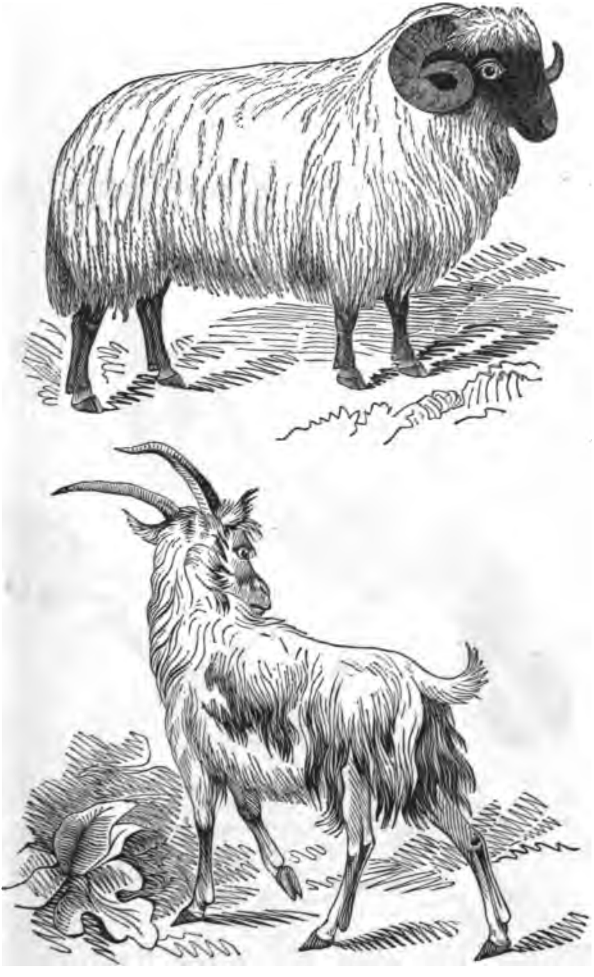

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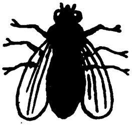

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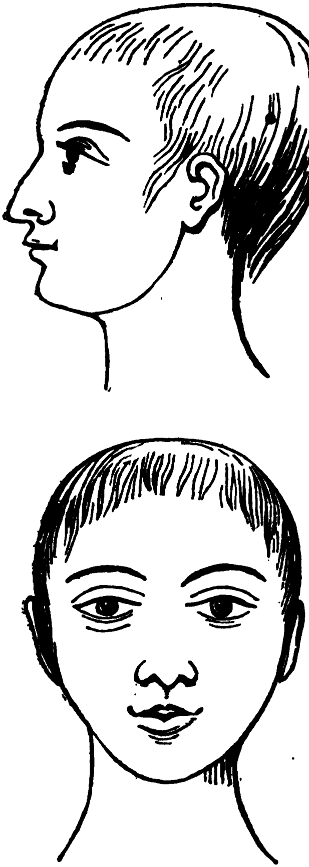

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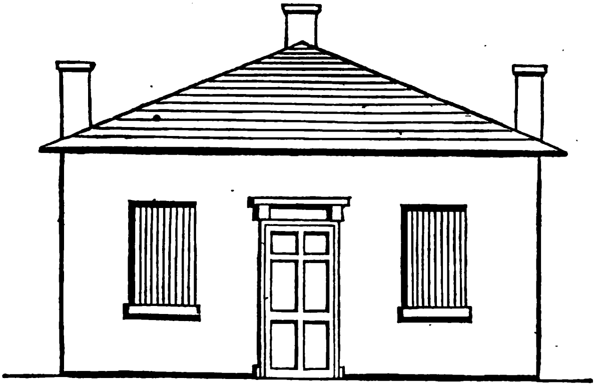

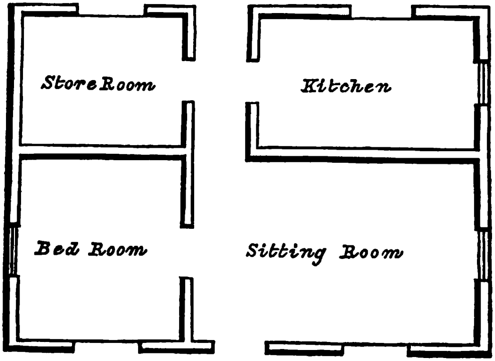

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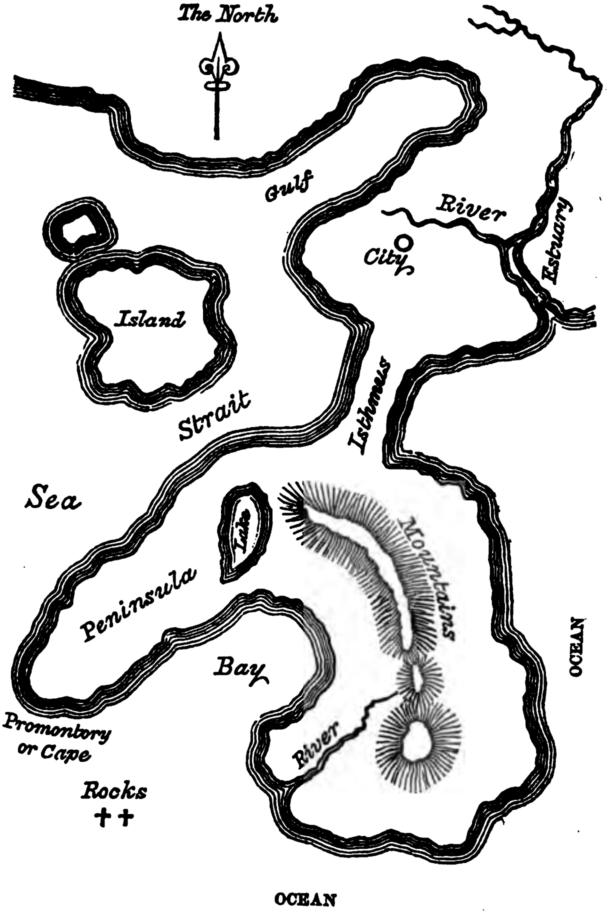
The North
Gulf
River
City
Estuary
Island
Strait
Isthmus
Sea
Lake
Mountains
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Bay
OCEAN
Promontory or Cape
River
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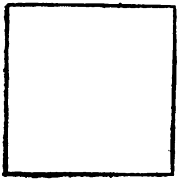

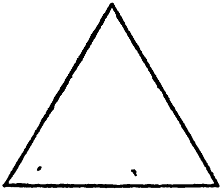

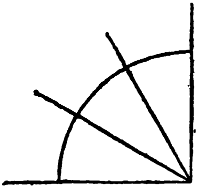

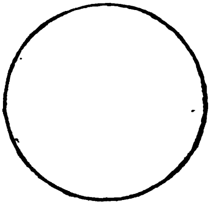

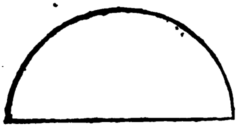

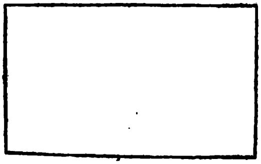

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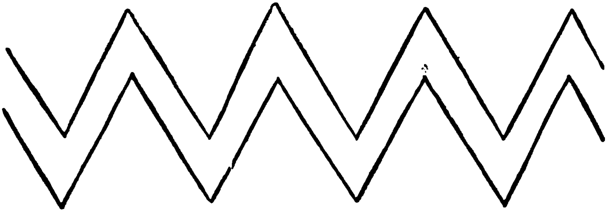

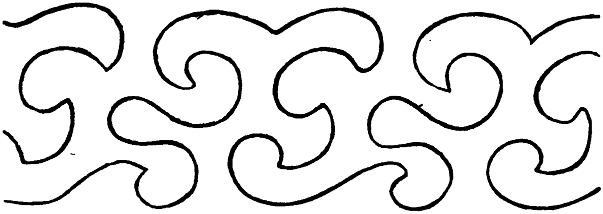

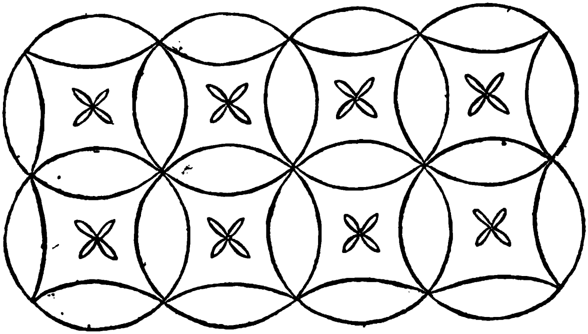

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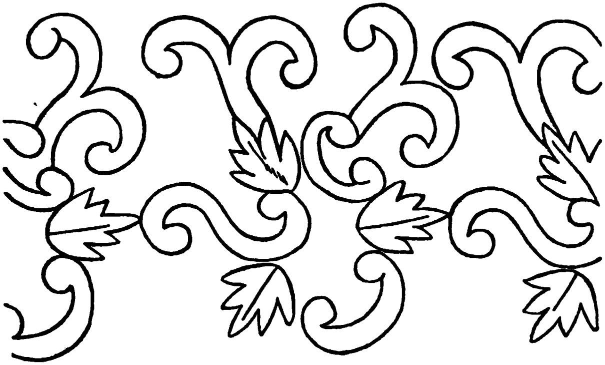

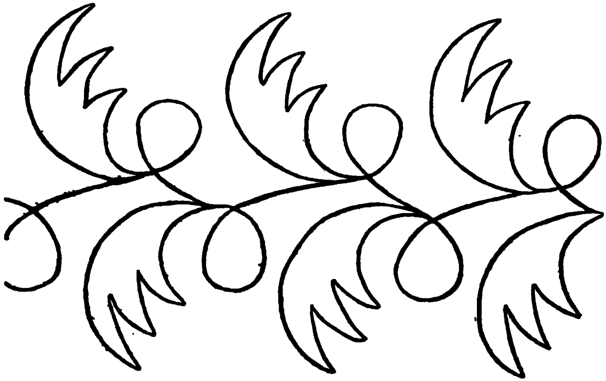

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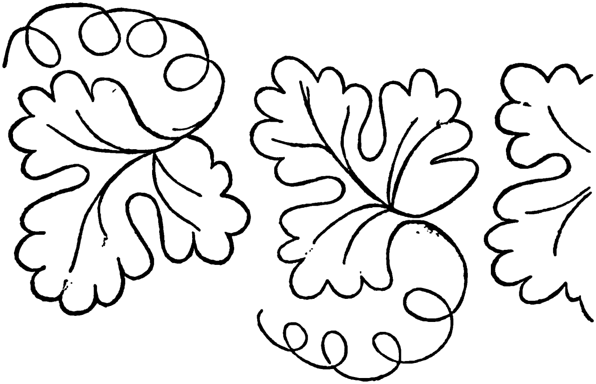

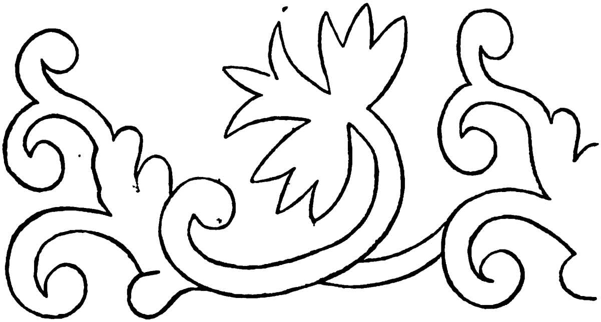

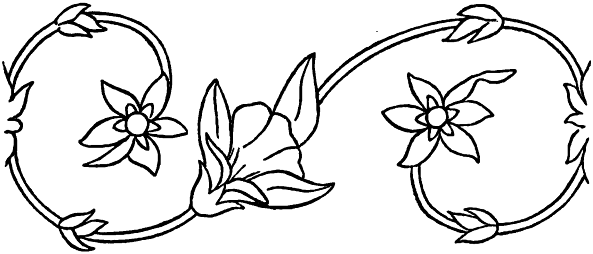

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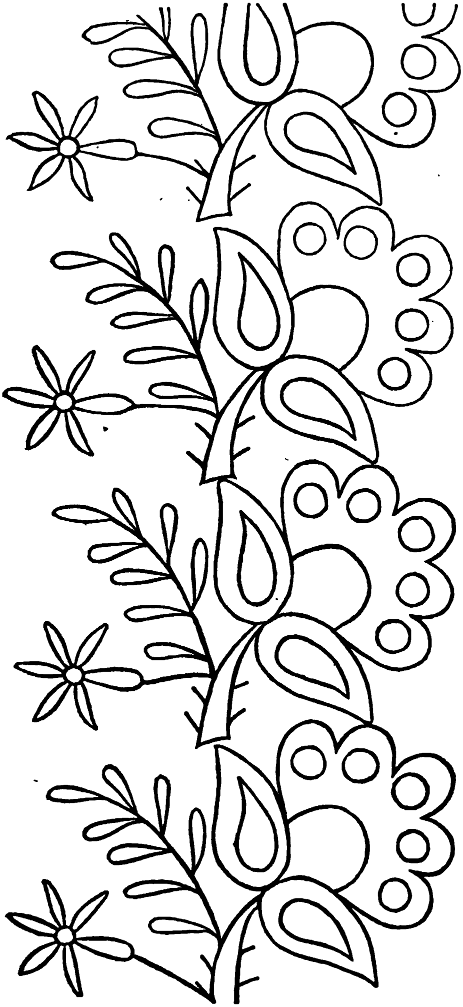


CHAMBERS'S EDUCATIONAL COURSE—EDITED BY W. AND R. CHAMBERS.

SECOND BOOK OF DRAWING,

INCLUDING

PERSPECTIVE.

BY JOHN CLARK,

AUTHOR OF AN ESSAY ON DRAWING AND COLOURING; PROGRESSIVE LESSONS IN LANDSCAPE DRAWING; &c.

EDINBURGH:
WILLIAM AND ROBERT CHAMBERS;
W. S. ORR AND COMPANY, LONDON; W. CURRY JUNIOR AND COMPANY, DUBLIN; JOHN M'LEOD, GLASGOW;
AND SOLD BY ALL BOOKSELLERS.
1840.

EDINBURGH:
PRINTED BY W. AND R. CHAMBERS,
19, WATERLOO PLACE.

BIBLIOTHECA · BODLEIANA ·

PREFACE.

The First Book of Drawing, which precedes the present, is presumed to have been made the subject of study before commencing with the more advanced exercises in this treatise. The pupil having acquired some knowledge and experience in handling a slate-pen, piece of chalk, or pencil, and of sketching in rude outline various objects in nature and art, is now introduced to the methodic rules or exact principles of drawing.

For the sake of those who have not received any precise instructions in drawing mathematical figures, the author commences with these, so far as they may be required, along with an explanation of technical terms; after which he proceeds to a regular elucidation of the rules of Perspective, accompanied with such simple directions throughout, as will greatly facilitate the progress of the pupil.

The fundamental principles of the system upon which the author proceeds, are, that the rules of Perspective should be learnt as early and as thoroughly as possible, and that the student should perfect himself by drawing natural objects, and not continue to work in mere imitation of copies, as is too frequently the case. On no other point has he any unalterable rule. The lessons in Perspective may be alternated or mixed up with attempts in Sketching, or at least with those exercises pointed out in the extract from Mr Hay's work, at page 54, the utility of which, for attaining a greater command of hand, is very obvious. In these, as in many other departments of the study, much must be left to the discretion of both scholar and teacher.

Edinburgh, *July* 10, 1840

DRAWING AND PERSPECTIVE.

THE REQUISITES FOR DRAWING.

To commence the practice of Perspective and Drawing, the student should be provided with a **Drawing-Board**, which may be made of any wood that will not cast or warp; it may be of any convenient size; about two feet by eighteen inches is recommended; it is required to be smooth on the surface, and perfectly squared; that is, at right angles. On this board the drawing-paper is to be fastened. Damp the surface with a sponge and water, more than once if the paper be thick; leave it to expand and become flat; then turn back the edges about half an inch in width on each side, and, having some glue heated, pass a portion of it along the board with a brush under the edges of the paper, and rub them down securely; it must then be left to dry in the air.

The next requisite is a flat rule called a **T Square**; this is a thin straight-edge, or rule, attached at right angles to a short piece of wood much thicker, so that when the cross-piece is moved along any side of the board, the rule will project across the paper, and by its edge, pencil lines may be drawn straight from right to left, and from top to bottom; the truth of which will be proved by the crossing of those lines being at right angles. To prove this, let other lines be made from the opposite sides of the board; and if they agree with the former lines, by being parallel to each other, all is right. On this the correctness of the drawings will depend.

To these must be added a Pair of Compasses, an instrument so well known, that it is only necessary to remark, that the points should be just so sharp as to hold on the paper without piercing it. The compasses should be held lightly by two fingers and the thumb, and moved with the least pressure which the operation may require.

These simple implements will be sufficient, until a knowledge of the art suggests the necessity for a case of mathematical instruments.

Paper may be purchased of all qualities; for early practice, it is sufficient for it to be what is called "hard;" that is, it must bear to be written upon with pen and ink.

Black-lead pencils are of various qualities: a soft pencil gives off the lead too freely, and will not retain its point; a hard pencil wounds the surface of the paper, and cannot be easily obliterated; therefore the medium pencil is best for drawing perspective. The wood should be carefully cut from its point, and the lead sharpened by being gently rubbed on a file, which not only obviates the difficulty in cutting a pencil well, but produces a better point than can be formed with a knife.

Indian-rubber, or a clean crumb of bread, to take out lines incorrectly drawn, is necessary.

EXPLANATIONS OF TERMS AND FIGURES.

Those who have received instruction in the Elements of Plane Geometry, according to Euclid, will find it an easy matter to comprehend the terms and to construct the figures used in teaching perspective. As all, however, are not geometricians, we proceed to point out, in simple language, the terms used in drawing, with their explanations, as well as the rules for forming diagrams, in the elements of perspective, with mathematical accuracy.

A Point means a spot occupying no space but merely that to which lines may be drawn.

A Line is an evident mark drawn from one point to another.

Horizontal Lines are those which are drawn straight across from left to right.

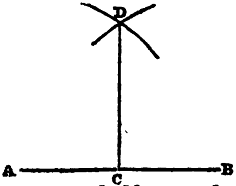
Parallel Lines are those which are drawn equidistant from each other, and could never meet in a point.

Diagonal Lines are those which are drawn obliquely, or slanting, either way.

Vertical or *Perpendicular Lines* are those which are drawn perfectly upright. When a straight line standing on another straight line makes the adjacent angles equal to one another, then the upright line which stands on the other is called a *perpendicular* to it.

The drawing of a perpendicular line is to be thus proceeded with: Suppose the line AB (Fig. 1), which may be considered as the base line of an object or of a subject to be sketched, the student will draw it of any length at pleasure, and it must be considered the given line, or the straight line on which the perpendicular line is to be raised. With the compasses divide the line AB into two equal parts; the centre will then be at C, the point on which the perpendicular is to be placed; then expand the compasses at pleasure, say half as much more, and place one foot at the mark made by the compasses at the division A, and draw a small portion of a circle as nearly as can be judged above the centre C; just sufficient for the mark to be seen is enough; then, being careful not to alter the expansion of the compasses, set one foot in the mark B, and draw a small portion of a circle so as to intersect that previously drawn, as at D, and the true perpendicular will be the line drawn from D to C. Thus it will be seen, that if a right line DC fall upon another right line, as AB, so as to make equal angles on each side the line, DC is a true perpendicular.

Fig. 1.



A Cube is a solid square figure of six equal sides and right angles.

Centre is the point in the middle of a circle.

An Arc is a line forming any portion of a circle.

A Radius is a line drawn from the centre of a circle to its circumference. (*Radii* is the plural of radius.)

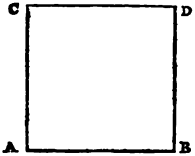
A Segment is a portion of a circle cut off by a chord.

A Chord is the line drawn from one extremity of an arc to the other.

To Intersect is to make one line cross another; where they touch is the point of intersection.

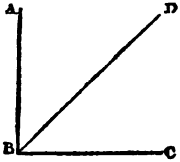
The Square.—A square is a figure which has all its sides equal, and all its angles right angles. The drawing of this figure requires the base line to be given, on which points A and B, perpendiculars, are to be raised as before; then the space AB being correctly taken and marked on the perpendiculars on either side, as at C and D, the line CD being drawn parallel to AB, having all its angles right angles, the true square will be represented.

Fig. 2.

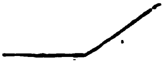


The Angles.—The angle which is contained by the straight lines AB, BC, is a *Right Angle*; that is, a perpendicular meeting a horizontal line, forming the angle ABC of 90 degrees. The diagonal line D, which meets the angle B, divides it into two angles of 45 degrees each. The measure of an angle is expressed by the number of degrees which it contains, or its proportion of the circumference of a circle.

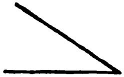
Fig. 3.



An *Obtuse Angle* is that which is greater than a right angle, thus,

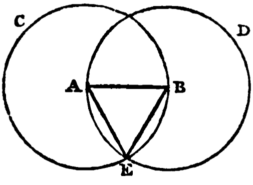


An *Acute Angle* is that which is less than a right angle, thus,



The Equilateral Triangle is a figure which has three equal sides. It is particularly useful in the diagrams which accompany this work, and is thus scientifically constructed: Let AB be the given straight line, or the base of a drawing; at the extremity A place the foot of the compasses; extend the other foot to B, and describe the circle C; then, being careful not to alter the expansion of the compasses, place one foot at B, and

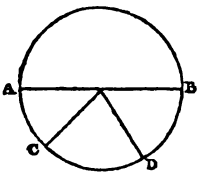
Fig. 4.



describe the circle D.; then from the point E, where the circles intersect each other, draw the lines EB, BA, and AE, and the equilateral triangle is formed.

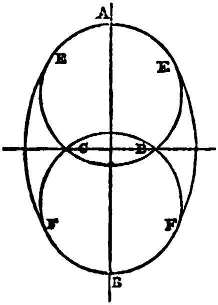
The Circle.—A circle is a plane figure expressed by one line, which is called the circumference, and is formed by fixing one foot of the compasses, and with the other foot expanded, drawing a line till it meet the commencement. The circumference of circles of all dimensions is divided into four times 90 degrees, or twice 180 degrees, making in all 360 degrees; each degree being divided into 60 minutes, and each minute being subdivided into 60 seconds. The *Diameter* of a circle is a straight line drawn from one side of its circumference through the centre to the other side. The diameter cuts the circle into two half or semi-circles. In the figure of the circle here given, the line AB is the diameter; and the lines CD, drawn from the centre to the circumference, are radii.

Fig. 5.



An Ellipse or Oval may be thus constructed. On a given line, as AB, describe two circles of such diameter as may best accord with the required proportions. Whatever size be taken, let the foot of the compasses be placed so as to describe the elongated parts of the figure true on the perpendicular line AB. Then draw a horizontal line so that it intersects the parts C and D, where the circles cut each other. Now, the width of the oval may have been previously determined; if so, it must regulate the expansion of the compasses, and determine where the foot shall be placed on the line CD, equidistant from the centre, so as to describe the segment, that it may unite with the lines of the circles on either side, forming a continuous line, as at EE and FF; that is, in such a manner as to form the oval figure as if made by one operation.

Fig 6.



Another mode of forming an oval may be resorted to: Draw the line for the length, and another line, at right angles, across it, for the breadth of the figure; then divide the longer line into six equal parts; into the marks made by the compasses at the second and fifth, fix needles, so that they project outwards from the centre of the oval. Then pass a silk thread round the needles, and tie the ends in a knot at the place which may be determined to be the width of the oval, by gently pulling the thread, and observing that at both needles it lie close to the paper; then, having a pencil with a notch cut in it, the nearer to the point the better, place the thread in the notch, and, holding the pencil as perpendicular as possible, and keeping the thread at an equal tension, continue to draw the line till the oval is completed.

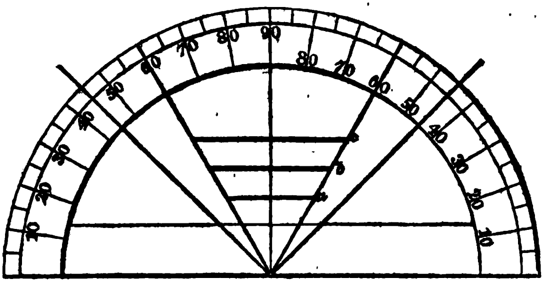
The figure may be made more round, or more elongated, by placing the needles nearer or more distant from each other. The movement of the pencil must be slow, and pressed outward as equally as possible, that the thread may glide round the needles, neither to disturb them nor cause the pencil to jerk, or start from the true position.

There are many mathematical instruments admirably adapted for the construction of geometrical diagrams, and for facilitating the drawing of perspective, all which are valuable to professional draftsmen. The student in delineation, however, will acquire all the information called "preparatory," by attending to the drawing of the simple diagrams as they follow in these pages, with the few simple instruments which are described.

THE SECTOR.

The following diagram (Fig. 7) represents a common Sector, for the examination of those who are unacquainted with the application of angles to linear perspective. It is a semicircle, or the figure which is comprehended between the diameter of a circle and half its circumference. On the edge are marked twice 90, or 180 degrees. On the chord or base line which joins the extremities of the arc, is a point which determines the centre of the circle.

Fig. 7.



The attention of the youthful student is particularly called to the use of this figure. The eye of a person, when sketching from nature, is presumed to be placed in the centre of a circle of 360 degrees, and the expanse of vision, while the eye is stationary, is an angle of 60 degrees; in other words, the eye embraces a range of 30 degrees on each side of a centre. This angle is found by drawing the diagonal lines from the centre on the chord to where 60 is marked on the edge of the sector to the right and left, being 30 degrees on each side of the perpendicular at 90. This angle of 60 degrees has no reference to the length of lines on either side, since they are regulated by the assumed width of the picture proposed to be drawn, as shown by the bases at *a*, *b*, *c*, on the expanse of 60 degrees. Each of these, being pictures, would represent the same scene, the objects of which it was composed being enlarged in agreement with the magnitude of the surface.

This central situation of the eye, which, with the extremities of the base line of the picture, under all circumstances, forms an equilateral triangle, must be particularly noticed, because it regulates the line by which a change in the situation of the eye or station is afterwards made.

When any object, as for instance a house, presents its corner to the spectator, both sides recede to their respective vanishing points on the horizontal line; and these points are found by drawing the diagonal lines from the station at an angle of 90 degrees, that is, from the centre of the chord to where 45 degrees is marked on the edge of the sector, right and left of the perpendicular.

To facilitate the application of these angles, the student is recommended to draw them on a piece of transparent paper, or construct them on stout cards, and cut them out with truth, marking the perpendiculars down the centre of each, and use them, as will be explained hereafter, in connection with the base, the horizontal line, and point of sight.

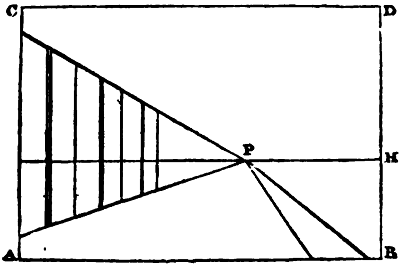
HORIZONTAL LINE AND POINT OF SIGHT.

Every person who has stood on the sea-shore may have observed the boundary line of the water meeting the sky. This may impress the idea of what, in perspective, is called the *horizontal line*, and which in all the following diagrams will be marked H. That part of the horizontal line to which the eye of the spectator is directed, is called the *point of sight*, and which in the following diagrams will be marked P. If the spectator ascend to any height on the shore, the line of the ocean, or the horizontal line, will ever be found on a level with the eye, and the spectator may direct the attention to any part of the scene; therefore the horizontal line, and the point of sight, may be fixed where they will best accord with the nature of a proposed picture.

VISUAL RAYS.

Every person looking on a straight road, which continues into the extreme distance, may observe that the edges of the road appear to terminate in a point. This apparent diminishing of the road is determined by lines, or visual rays, being drawn from each side of the width of the road in front, to the point of sight P on the horizontal line H, as in the following diagram.

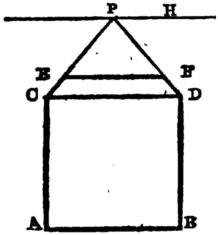
Fig. 8.



The consideration of this may fix in the mind the fact, that all objects appear to diminish in proportion to their remoteness from the eye of the spectator. Hence, posts or columns of equal height will appear to become shorter as they recede from the eye, and the lines which regulate their diminutions, or their visual rays, must be drawn, as in Fig. 8, from the summit and the base of the column nearest to the eye, to the point of sight P. This is an illustration of objects of equal height seen in perspective, parts of which are above the horizontal line; while the road is an illustration of an object of equal width seen in perspective below the horizontal line. AB is the *base* on which the picture is formed; CD the verticals or sides of the picture, and with the line joining these at the top form the plane or surface on which the picture is represented. This surface may be regulated at pleasure; a proportion of a square and a half wide, by a square in height, is usually preferred. The horizontal line, as previously stated, may be placed at pleasure, but it is generally regulated in its elevation by the nature of the subject to be drawn. If placed high up, it leaves too small a proportion of sky, and produces what is called a bird's-eye view; if placed low down, or too near the base, unless the scene be mountainous, it will appear insignificant, from having too great a proportion of sky. These considerations render it advisable that the horizontal line should be drawn at about one-third of the height of the picture. The point of sight may be fixed at pleasure; perhaps it is generally better to place it a little removed from the centre of the picture, because, if the subject consist of a street, or an avenue of trees, the perspective would be very formal, and the scene would thereby be diminished in interest.

When an object having angles, as a box, stands on a base parallel to the horizon, and two of its sides, or surfaces, can be seen, that which is farthest from the eye will recede according to the situation of the point of sight. Let the student place a box, or square object, immediately in front of the eye, as in Fig. 9. AB is the bottom or base of the box, CD is the upper edge of the box, and EF is the farther edge of the top of the box. AB, the base, being parallel to the horizontal line H, the point of sight will be at P, and the visual rays from the upper corners of the box will centre in P, because the eye is in front, and above the object. Any alteration of the position of the box, or the eye, will consequently require a corresponding arrangement of the laws of perspective.

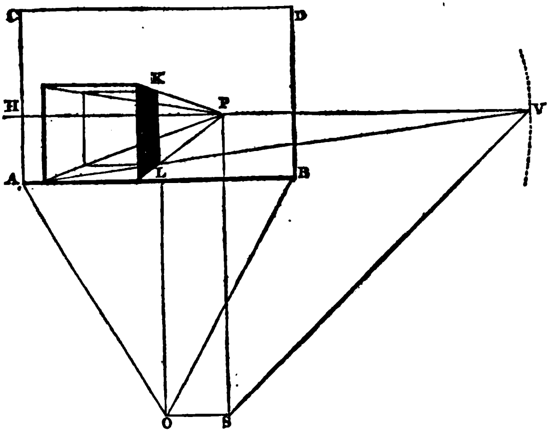
Fig. 9.



The student is directed to place the box toward the farther side of the table, immediately in front, and lower the eye till the horizontal line is one-third down the box, when the top will be lost sight of; there let the eye be fixed, by resting the chin on any convenient object, and the front, or only one side of the box, will be seen. Then let the box be moved to the left, in a straight line, the position of the eye being retained, and a second side of the box will come into sight; its receding lines, or visual rays, will then be centered in the altered point of sight, and the side in front will retain its form, because its base is parallel with the horizon. When this experiment shall have been made, and the situations of the box and the eye shall have been considered, presuming the box to have been a cube, let the student proceed to ascertain the mode of representing this object according to the rules of perspective, referring to the natural appearance of the box occasionally, the more effectually to fix on the mind the agreement between them, which satisfactorily gives the reason for every line that is drawn. Fig. 10 will show the process by which all the particulars may be demonstrated. Presuming the paper is fastened down on the drawing-board, the T square and pencil ready, let the student commence thus; in the first place, judging of the proportions required for the subject, and giving room for all the lines of the diagram to be clearly drawn on the same piece of paper. Apply the T square and draw the base line AB, and also the boundary of the picture CD. Then draw the horizontal line H across the paper; this may be fixed at pleasure, but parallel to AB. Then find the half of the base AB, and draw a perpendicular beneath the picture to O, and on it

Process of drawing a Square Box, or Cube, in Perspective

Fig. 10.



place the profiled angle of sixty degrees, just at that distance which, by continuing the sides of the angle, they will intersect the extremities of the base, and together form an equilateral triangle, as AOB: this must be strictly attended to. Now, as before observed, the point of sight is better when removed from the centre of the picture; and taking a station to the right, by a horizontal line from O to S, this becomes the station whence the picture is seen, and the point of sight is therefore found by the perpendicular line from S to P on the horizontal line. Now, as a vanishing point is required to determine the width of the receding side of the box, the profiled angle of 90 degrees is to be placed at S on the perpendicular PS, and the side line continued until it intersects the horizontal line at V, which fixes the vanishing point: this also must be strictly attended to. It will be observed that the angle at S is one of 45 degrees, being the half of the profiled angle of 90.

The student's attention is called to the situation of the eye, which is always on a level with the horizontal line; therefore the true position of S is immediately in front of P, or, as if the perspective-lines beneath the picture could be raised, up to the level with S, and fixed at that distance from the picture, to show the true situation of the eye when viewing the object. The front square shape of the box may then be drawn in, occupying less than half the base of the picture, in order to show the perspective, as at Fig. 10; then, from the nearest perpendicular of the box draw the visual rays from the top and the bottom of the square to P, which give the diminutions. Now, a line drawn from the corner of the box near A to the vanishing point V, will intersect the diminishing line, which gave the receding base of the box, at L; and a perpendicular line from L to K on this intersection, will give the true representation of the square box as seen in perspective. If this were a cube of glass, the farther sides would be seen as shown by the finer lines in the diagram.

The student is requested to repeat this study in different sizes, referring to the natural appearance of the box, in order to feel, as well as see, the coincidence between that and the object produced by the rules of linear perspective. It is of importance that he should understand this diagram thoroughly, because many of the rules employed in it are frequently required, and therefore they will be restated.

The boundary of a picture, or the plane, may be of any proportions. The base is marked in Fig. 10, AB. The perpendicular, from the middle of this base line, assists in finding the situation for the angle of 60 degrees, O, the width of the base, measured from the extremities, to the perpendicular O, forming an equilateral triangle, as AOB. This is a rule, whatever may be the size of the picture; it also shows the proper distance at which a picture should be viewed. This expanse of vision, at an angle of 60 degrees, is marked in the diagram O, and places the point of sight in the middle of the picture, which is very often objectionable; therefore a line parallel with the base is drawn, from O, and on this line the better station is taken, which is marked in the diagram S. Now, the horizontal line H, having been taken at pleasure, a perpendicular drawn into it from S, will give the point of sight at P, into which the visual rays are drawn that regulate the receding sides of the object. The vanishing point V is entirely distinct from the point of sight, of which there can be but one; but vanishing points may be numerous. This marked in the diagram V is of great consequence, for by it is determined the proper width of the object, by the line which intersects the visual ray from the base of the box A to V, as at L; and here the perpendicular to K, which intersects the upper visual ray, completes the perspective form of the object.

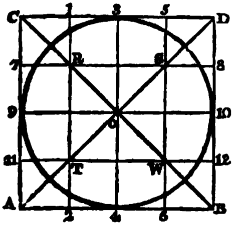
The student is requested to proceed deliberately with repetitions of the foregoing diagram, and by no means to quit it until every line shall have been satisfactorily accounted for. Marking of the letter of reference as the line is drawn, has been found to assist in impressing upon the memory its particular use.

To Square a Circle to be Drawn in Perspective.

If a circle be viewed with the eye over its centre, its appearance is perfectly round, but if it be viewed obliquely, it assumes an elliptical shape, as may be seen by varying the position of a tea-cup, which being gradually raised at a little distance in front of the eye, will present elliptical forms progressively becoming more and more compressed, until on a level with the eye the circle is a mere line, or unseen. To put a circle into perspective will require but little reflection, if the preceding diagram have been completely understood.

This diagram (Fig. 11) represents the preparatory process of drawing a circle in perspective. Describe a circle of any size with the compasses, and with the T square draw the boundary, so that the lines just touch the circle, enclosing it within a perfect square, as ABCD, being right angles. Then draw the diagonal lines CB and DA true from the angles, and they will intersect the centre at O; then divide the boundary lines each into four equal parts; thus take the base line AB, and mark it with the compasses on the edge of the paper, and then find the fourth

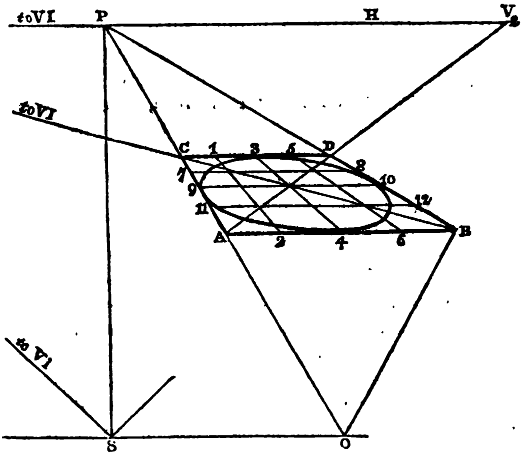
Fig. 11.



part by trial, till the points of the compasses in four measurements occupy the space from mark to mark exact; then tenderly mark the measurements on the boundary lines, just so that they may be seen, permitting one point of the compasses to remain on the line until the next mark is made; and so on till the boundary is completed.

This proceeding is advised, first, to prevent any trials or mistakes from appearing on the drawing; secondly, to ascertain that the square is perfectly divided, and at right angles; because, if care be not taken, in drawing a line by the straight-edge, to keep the point of the pencil close to where the straight-edge touches the paper, the line will not be true, and confusion must be the consequence. When the measurements are correctly made, draw the perpendiculars 1 2, 3 4, 5 6, then the horizontals 7 8, 9 10, 11 12. If all have been truly done, these lines will intersect the diagonals CB and DA, as well as their own intersections, respectively at R, S, O, T, and W, as in the diagram, Fig. 11.

Fig. 12.



The base line AB must be drawn and divided into four equal parts, as 2, 4, 6; then from the base line, as in Fig. 10, determine the angle of 60 degrees O. Let S be the station, and let the horizontal line be placed high up, as H, in order that the whole may be clearly seen, and by the perpendicular determine the point of sight P. Draw the rays AP and BP, which give the receding sides of the square; then at S take an angle of 90 degrees, and mark where at 45 degrees it would intersect the horizontal line on the left. This line is shown in the diagram in part, as marked *to* V 1, because the student is presumed to have acquired the knowledge that this line must be projected till it intersect the horizontal line. The other angle of 45 degrees need only be marked on the horizontal line to the right, as at V 2. Now, the value of these two points of distance, or vanishing points, will appear. Draw the diagonal from the base of the square B to V 1 on the horizontal line, and the diagonal from A to V 2; where these have intersected the lines AP and BP, the perspective of the square ABCD is determined; therefore let the horizontal CD be drawn. Then, from the numerals on the base 2 4 6, draw their lines to the point of sight P, which lines give the diminutions 1 3 5. The horizontal gradual diminutions will be regulated by the diagonals A V 2 and B V 1, Fig. 12, intersecting the lines, as in the diagram, Fig. 11, at RSOTW, and showing where the horizontals 7 8, 9 10, 11 12, are to be drawn. This reticulated square in perspective is the basis on which the circle is to be drawn; the student must therefore observe through what points and diagonals the outline of the circle passes in Fig. 11, and tenderly mark with the pencil on Fig. 12 a corresponding outline; this will require a little care not to confuse the lines. It will be better to put the perspective square in ink, and the reticulations with finer lines, so that the sketching of the circle may be drawn, obliterated where wrong, and corrected, until perfectly in agreement with the circle in Fig. 11, through all the diminishing parts of this square, after which it may be carefully drawn in with a pen and ink stronger than any of the other lines.

Circles may be put into perspective, when seen at any angle, by previously constructing their corresponding squares. When seen in front, the point of sight is in the middle on the horizontal line, and when seen from any removal to the right or to the left, the equilateral triangle of 60 degrees gives the point for the parallel line to the station far, or near; and there the angle of 90 degrees will give the vanishing points by projecting the respective sides to the horizontal line; the diagonals from the basis of the square to the opposite vanishing points will give the abridgement, and the rest will be found by the same process as Fig. 12.

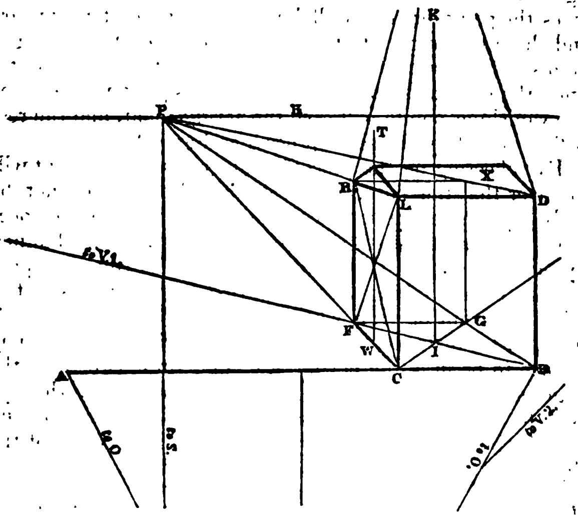
By reflecting on the preceding diagrams, the student will discover that the natural appearance of objects cannot be truly represented, unless according to the rules of perspective. The most satisfactory proof of this may be obtained by placing a cup in the position in which its rim may present an ellipse, taking precaution that the eye may see it in the same point of view when comparing the drawing with it. As, for instance, notice two stationary objects that may chance to be in a line beyond the cup; these two, with the edge of the cup and the eye, making four points, the eye will be easily brought to the same angle of vision, and thereby be better enabled to judge of the correctness of the drawing while comparing it with the original.

To find the Centre of a Pedestal on which a Figure may be placed, or an Obelisk raised.

Draw the base of the picture AB (Fig.13); take the angle of 60 degrees as before at O, and the station at S as before; place the horizontal high up at H, that the lines of the drawing may be clear of each other; the point of sight will then be at P. Then take an angle of 90 degrees at S, and the vanishing points will be on the horizontal line at V 1 and V 2.

The student will always determine the size of the object on the side next the eye; it is assumed in the diagram, but the principles apply to all sizes. Therefore, from the nearest corners of the pedestal, draw the visual ray LP at the top, and CP from the base, then BP and DP. Then draw the diagonals C V 2 and B V 1. Now, where B V 1 intersects the ray CP at F, raise the perpendicular to the ray LP, and it will determine the receding visible side of the pedestal R; and where the diagonal C V 2 intersected the supposed invisible ray BP at G, raise the perpendicular of the supposed invisible or opposite corner of the pedestal to the ray DP at

Fig. 18.



X; then the horizontals RX at the farther top, and FG at the bottom, will give the four sides of the pedestal, or the ground plan of their sides. Now, where the diagonals intersect, as at I, is the point which determines the centre of a pedestal, seen at this angle, on which a statue or an obelisk may be raised in agreement with the perpendicular K. The centre of a gable, in a building seen in perspective, may be found, after the perpendiculars are determined, by drawing the diagonals from C to R, and from F to L. Then a perpendicular intersecting the intersection of these diagonals, as from W to T, will give the centre of a pediment or a gable.

When the juvenile student has proceeded thus far, and has no other knowledge of the pencil than that which may have been acquired by the practice of perspective, there is no reason why he should not commence sketching from inanimate objects, such as articles of furniture in a dwelling, a house, a tree, the leaf of a plant, or any thing else which may strike the fancy. In attempting to execute correctly the objects thus thought worthy of notice, the pupil will at every step find occasion to revert to the principles of perspective, and will see the necessity for strictly adhering to them. The drawing from tangible objects is in every respect preferable to copying from prints or drawings. Experience has also demonstrated, that where students have taken outlines from natural objects, and have applied the rules of perspective as far as they knew them, the improvement has been more substantial than when they have been restrained from taking subjects dictated by taste.

Articles of Furniture in Perspective.

Fig. 14.

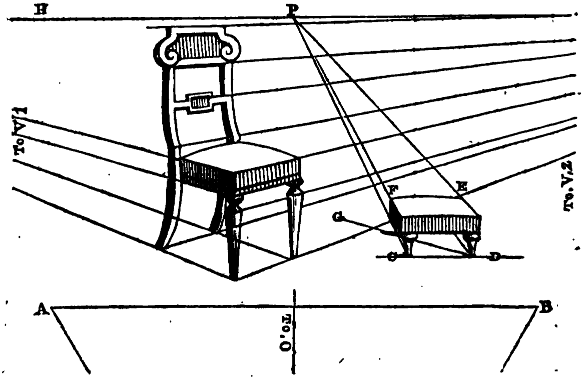


Figure 14 exhibits a parlour chair and a footstool. The student will observe that the chair stands with the corner of its seat nearest to the spectator, the point of sight being in the middle of the picture. The receding sides of the chair have their respective parts regulated by diagonals to their vanishing points.

The footstool stands on a line parallel to the base, and therefore its visual rays tend to the point of sight in the centre of the picture. These may prepare the mind of the student to consider, that objects, when differently situated, have each their vanishing points regulated by the angle at which they are viewed.

The student is on all occasions requested to draw the horizontal line so far on either side, as to be intersected by the diagonals, which are to be drawn at an angle of 90 degrees from the station, into the horizontal line where they determine the vanishing points. These are only indicated in the diagrams by the direction of those lines and the word "to" V 1, or to V 2.

In Fig. 14, the base line AB is drawn, its centre determined, and the perpendicular drawn to O; the angle of 60 degrees is taken in agreement with the base line, making an equilateral triangle, and the point of sight P is fixed on the horizontal line H. The vanishing points are found by the angle of 90 degrees at O, projected on either side to V 1 on the left, and V 2 on the right, as before described. All the diminutions of corresponding ornaments on the back and front legs of the chair are drawn to V 2, while the side of the chair is regulated by V 1.

The footstool is placed parallel to the base on the line CD, and its diminution regulated by the rays EP and FP. The diagonal G from the leg of the footstool D, to the vanishing point V 1, would determine the square of the stool, or the position of the farther leg, at the point where it intersected the ray CP.

Fig. 15.

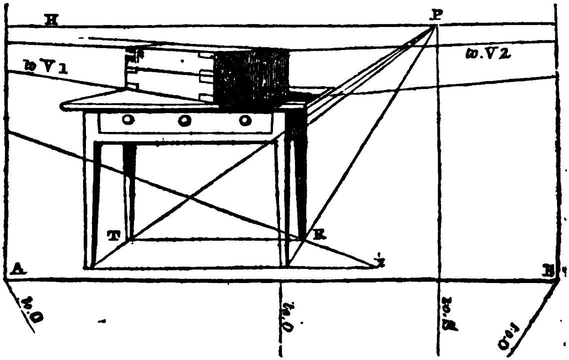


Fig. 15 shows the perspective lines required to represent a writing-desk placed diagonally on a table which stands on the base line. The base of the picture is drawn as AB the centre is taken, and a perpendicular drawn, to O, for the angle of 60 degrees. The horizontal line is drawn at H. The parallel is drawn from O to S, and there the perpendicular to the horizontal line fixes the point of sight at P. Then the angle of 90 degrees is taken at S, and the sides being projected to the horizontal line, gives the vanishing points V 1 on the left, and V 2 on the right. Now, the table being seen in front, or on the base line, the visual rays from the legs and the top are drawn to the point of sight P. The table being supposed to be a parallelogram, its side, seen in perspective, will be about half its width seen in front; therefore let half the space seen in front be set off from the leg on the right; and the diagonal from that half to V 1 will give the diminution of the side of the table, where it intersects the ray from the front leg to the point of sight P, at R. A parallel line from this to the ray from the other front leg will give the situation T for the most distant leg. The writing-desk being presented with its corner towards the spectator, both sides will require their receding points, which are determined by the vanishing points V 1 and V 2. Such familiar objects should be drawn, by which the more readily to fix in the mind of the student the leading principles of linear perspective.

If the student have perfectly understood the diagrams from 10 to 15, a foundation will be laid on which the study of perspective may proceed to all that can be required.

It will be seen, that, when an object has its base line parallel to the horizon, the point of sight is in the picture, and that it is arranged in agreement with the angle under which the object is viewed. Thus, if it be an object which has four sides, and one of those sides be immediately in front of the eye, the visual rays will be hidden, because the point of sight is in or behind the object. It will also be seen, that, if the object be moved on either side, or the point of sight be altered by a change of station, the visual rays determine the receding side of the object, immediately a second side can be seen.

If the base line of an object be removed from its parallel to the base line of a picture, the angle under which the object is viewed becomes altered in strict conformity with its changed position, the particulars of which the student may ascertain by placing an object in the various positions.

Suppose a chest of drawers, or a cube, to be placed and seen as in Fig. 10; and while the nearest corner is to act as a pivot, the end near A to be moved so as to cause a space between the base line of the object at that end and the fixed base line of the picture, the angle of vision would require that the base and top lines of the object should have their vanishing points. The object could be moved thus at different times, until that which in the diagram is the receding side, would become the front, and each position would require a diagram; but the student is presumed to have become acquainted with the fact, that, at each pause in the movement of this object on its pivot, there will be exhibited a diminution on one side, proportionate to the increase of the other side; until, by continuing these rotatory movements of the object, that side which was at first presented obliquely, becomes the front, and its base parallel to the base of the picture. The original front of the object, by the revolving movements, will have been lost or hidden, exactly in proportion as the receding side advanced to the front. Thus the vanishing point extended as the advancing side became more evident, just in proportion as the receding side diminished. Let the student make these experiments, and observe, on the first change of position deviating from a parallel with the base of the picture, that the vanishing point V 1 was required, and so far removed on the horizontal line on the left, as perhaps to require an angle of 80 degrees at the station, while V 2 on the right would then require an angle of 10 degrees. Any subsequent change of position in the object will alter the angles for the respective vanishing points, and these together always making an angle of 90 degrees.

If this placing of objects, expressly to study linear perspective, be not fully comprehended, the student is requested to reconsider Fig. 10, and to draw Figs. 14 and 15 with attention again, having room for all the lines necessary to the perspective on the same paper, and as large as convenient, after which return to the study of the different angles under which objects may be viewed, and they will more evidently appear.—Let it be noted, that a vanishing point is required for each side or variety of surface that may be presented to the eye.

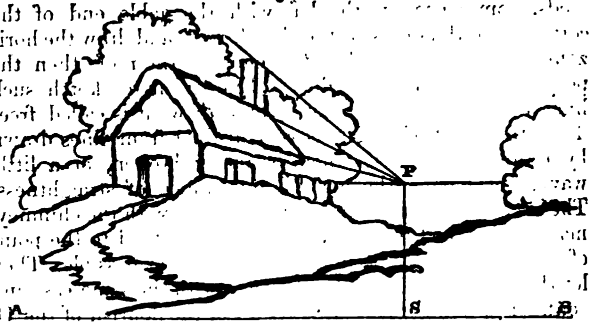
ENLARGING.

For copying a drawing upon an enlarged scale, there is an instrument called the Pentagraph, which greatly facilitates the process, but is too expensive for ordinary students. Enlarged copying may be effected almost as well by the following simple means: Procure a sheet of Bristol-board or stout card paper; cut in it an aperture rather less than the size of a page of the sketch-book, and at right angles; then near the edge of the aperture divide the top, base, and sides, into half-inch measurements, so that the marks shall be even with the base and sides of the aperture; then with a needle pass fine thread through the various marks, from side to side and from top to bottom, taking care that it always issues from the same side of the card, so as to lie close to a sketch when used. Number the threads from one onwards on the base from the left, and from the base upwards on each side. These squares of thread, which resemble the reticulations of a net or sieve, may serve on many occasions when drawings are to be made of any large size from the sketch-book. Of whatever size the drawing may be required, it is necessary to determine the proportions, say one, two, or three inches, for each half inch square of the threaded card; thus the boundary line of the drawing being ascertained, measure off the squares in number agreeing with those of the card, and rule the lines horizontally and perpendicularly true, just to be visible; then proceed to sketch the outline of the subject, by observing in what squares or lines any particular character appears when the threaded card is placed close on the sketch-book, and imitate them in the corresponding ruled squares and lines of the large drawing.

SKETCHING FROM NATURE.

After the introductory rules of perspective have been mastered, and some progress has been made in delineating single and simple objects, the lessons of the student may very profitably be varied by a few attempts in sketching from nature. Under the guidance of his own taste, let him select some assemblage of ordinary objects, such as he may think agreeable in themselves, and likely to be represented without any considerable difficulty. The scene selected should not contain more than three or four objects of different kinds—such as a cottage, one or two trees, and a small rustic paling, with perhaps the addition of a little glimpse of background. He must observe that an artist rarely ever takes an object in its broadest and most regular form: he never represents a house, for instance, as if he had taken up his position right in front of it, as an architect would do; nor would he paint a row of trees at a right angle to his own position, seeing that the effect of such representations would be tame and formal. He endeavours to catch the careless grace of nature, as she appears to casual observation. A house, particularly, should always be viewed from a point a little aside from the front, so as to bring in as many of its angularities as possible. A group of natural objects should be represented as if the draughtsman had just by chance got his eye upon it; and yet the selection of a point from which this effect may be obtained, must be a matter of study. For an early lesson in sketching from nature, it is enough that the objects be outlined: to fill in details, and give the full effect of light and shade, must be left to a future period in the career of a young artist. As an example of the scenes which may be selected for early sketches from nature, Figure 16 is given, being simply a cottage, backed by a few trees, and having some broken ground in front, while a glimpse of the sea is obtained at the side of the picture. The station of the draughtsman is here at S, in order that the cottage may not appear to have been viewed formally, and that the trees behind may give to the scene its neat pyramidal form, while the broken grounds in front communicate boldness of character, and the straight line of the sea, at P (which is the horizontal line), affords a pleasing contrast to the other lines of the drawing.

Fig. 16.



The station being selected, the student is recommended to hold up the sketch-book in front, with one eye closed, in order to determine how much of the scene is to be transcribed; the farther off the book is held, the less of the subject will be covered. When the extent of the scene is arranged, the book may be gently lowered, and a few dots made on the top margin, merely to point out the relative situations of particular features, as the width of the cottage, and the trees. Then remembering to preserve the station, mark the point of sight on the distant horizon. Do not be in haste, but judge of the relative distances of the most prominent parts, such, for instance, as the gable end of the cottage and its length, and tenderly mark them on the places to be so occupied. When these or more dots for guides have been placed, examine their relative distances, and compare them with the objects, by holding the sketch-book out in front, so as to see the agreement between them over the margin. To arrange these particulars well at first, will save much trouble in obliterating falsely drawn lines. Be careful in sketching to preserve the perpendiculars of walls and chimney; that is, by placing them at right angles with the base line, which is now the lower edge of the sketch-book. This caution is necessary, because the use of the pen in writing communicates a facility in making diagonal lines.

To prevent the hand from injuring the sketch as it proceeds, commence on the left with the gable end of the cottage, the thickness of the thatch roof, and draw the horizontal line which attaches the ends of the roof; then the perpendiculars, and the door. Endeavour to sketch such lines with a lightness of hand, or with what is called freedom, the effect of which is very distinct from lines drawn by a straight-edge; let them be rather broken, or a little wavy, yet having the general appearance of straightness. The receding side and roof of the cottage, with the chimney, may be sketched in the same way; these tend to the point of sight, which must be judged of as nearly as possible. Then let the masses of foliage be sketched with the same ease and confidence that the capital letter E, or the flourish of the D, are made in writing. Sketch the grounds, in their different undulations, rather more angularly, or as if ruggedly dashed in, and strengthen the lines where separation of parts seems to be required.

The student should examine the objects of which this scene is composed, and consider that the lines for the cottage have one character, the lines for the trees another, and the lines for the ground a third character, which detach the objects from each other. A simple outline of these three forms is sufficient to be aimed at, for the introduction of more markings or separations would only tend to confuse the early studies.

The terms *flourish* and *dash* are used to express the reverse of dragging the pencil over a form with an apprehension of doing wrong; this must be crude, the other may be free. No language could describe the *manner* in which sketching should be attempted, and if it could, there would be folly in adopting it; each student, who uses the pencil, should discover *a manner* of representing objects, and not imitate the mode or style of any person.

The obviating of the appearance of stiffness or formality in sketching, is a power acquired by taste and judgment, after considerable practice. The variety of character above alluded to is not essential to the simplicity of outline at the commencement of sketching, yet it may be aimed at for future advantage.

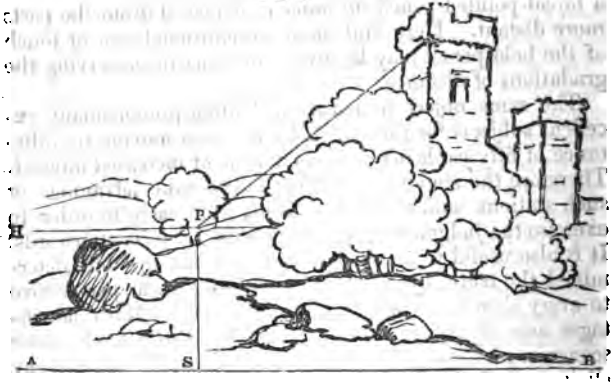
Returning to Fig. 16: If the lines on a first attempt be not all the student expected, they furnish a proof that the mind is in advance of the hand, and should operate as a stimulus to exertion. In a few studies he will discover, that, by beginning with a cut point to the pencil, it gradually wears away, and gives an increasing thickness of line; this is often very advantageous, for, as the sketching advances to the foreground, the bolder lines of the pencil contribute to the separation of parts, to regulate distances, and give a more spirited effect to the subject. The student will also discover, after a little practice, that, by a gentle twist of the pencil, a fresh point or surface will come in contact with the paper, and with it a finer line may be drawn. Occasionally, by pressing harder on the pencil, an increase of power will be communicated to such parts as may require separation or additional spirit, as on the rude line which forms the foreground in Fig. 16, and gradually on the pathway to the cottage door. Whatever be done of this description, should not destroy the character of a simple outline, which at any future time will clearly define the masses of which the scene may be composed.

A few lines expressive of the leading features of a scene become far more valuable than if a multitude of markings were introduced, with the design of giving a more exact likeness. All these attempts to *make-out* should be avoided for the present. The term make-out is synonymous with *niggling*, or spoiling a sketch, by encumbering it with markings which signify nothing, or such as would be soon forgotten. A sketch is a note whence a page or a volume may be written, and therefore should be as clear as possible. The perspective lines to the sketch may be proved at convenient opportunity. In Fig. 16, the cottage stands on a line parallel to the base AB, the point of sight P is perpendicular to the station S; consequently, the rays that regulate the side of the chimney, the upper and under lines of the roof, and the window on that side of the cottage, all centre in P. Simple as this little study may appear, it may not at first be very easily executed. Let the student not expect too much, or the first slight impediments he meets with may discourage him so far as to cause him to throw away the pencil. A patient, but hopeful spirit, neither fearing difficulties nor making light of them, is that in which the earliest efforts in drawing should be made. Nothing is to be done by impetuosity. The mind of the student must calmly investigate for itself, till the secrets of the art, so to speak, develope themselves to it, or rather, to speak more philosophically, till the proper faculties become awakened; after which it will be in a great measure its own instructor. Any principle in art, which may have been thus suggested, remains for ever on the memory, and is worth any amount of lessons, in which the direction of a master has been only followed mechanically. It is not indeed till the mind of the student has sought out and ascertained much for itself, that lessons are found to be truly useful. The pupil may rest assured, that in most cases in which great proficiency has been attained in the art of delineation, no small degree of trouble has been endured, and many failures have taken place, before the artist was finally successful.—It may here be proper to mention, that the indications of scenery which are presented in these pages, are not intended to be imitated by the student, as in the case of prints published under the character of copies for imitation, but are given simply with the view of illustrating the lessons which we are attempting to convey.

Suppose a scene to consist of two or more plans, as the remains of a castle on an irregular surface, with a mass of trees in front and near it as the principal or leading feature of the scene, an arm of the sea and remote hills forming the background or distance, and a rude foreground. Should there be any similar union of objects in the neighbourhood of the student, it is recommended that the spot be visited, that the hints which accompany the diagram on next page, Fig. 17, and the reason for every particular which is mentioned, may be examined, and the principles on which the proceedings are founded, investigated, that the student may comprehend what is intended to be conveyed in the following hints.

On the supposition that such a scene can be visited purposely to be sketched, select a station that will present a variety of forms or opposition of character, such as lofty objects contrasted by small objects, which will prevent the appearance of equal heights or parallels, and also prevent

Fig. 17.



the scene from being crowded or closed up. The castle toward one side of the picture, and the distance on the other, so as to form an irregular diagonal mass, are in better relief than if the building with the trees were more in the middle of the subject. The opposition of angular to circular forms produces a pleasing effect in a sketch, and should be observed. If the perpendiculars of a ruin be broken, the general appearance must be that of standing upright; for however mutilated towers or walls may be, there will still be evidences of their having been properly constructed. When these particulars shall have been considered, proceed to arrange the situation of the principal mass, by dotting on the edge of the sketch-book; and by faintly indicating the forms, determine the horizontal line, observing that hills may appear far above: in Fig. 17, it is at H on the extremity of the water, the station is at S, and consequently the point of sight at P, into which are drawn the visual rays, or lines which regulate the receding sides of the towers. These and the perpendiculars being arranged, they may be boldly sketched in, and the trees freely marked in a character partaking of the semicircular; the fewer markings the better, for it is the useless separation of parts composing a mass that destroys the breadth and boldness of a sketch. The distant hills may be tenderly indicated with a fine point, and the foreground may be coarsely defined with a broad-pointed pencil, in order to detach it from the parts more distant. Here and there an additional spot or touch of the bold pencil may be given, to assist in preserving the gradations of distance.

The same object in nature will often present many excellent subjects for the sketch-book; even moving to a distance of fifty yards may present a scene of increased interest. Therefore the student should not fail to take advantage of such stations, and sketch an outline from each, in order to exercise the judgment by comparing the subjects afterwards. It is also useful to ascertain how nearly the eye has determined the truth, by applying the rules of linear perspective to every sketch at the earliest convenience. Many advantages arise from two or three students sketching the same scenes in company, for various valuable remarks are thereby elicited, tending to mutual benefit. The sketch-book should be preserved complete, as containing records of advance in judgment, and correctness of delineation.

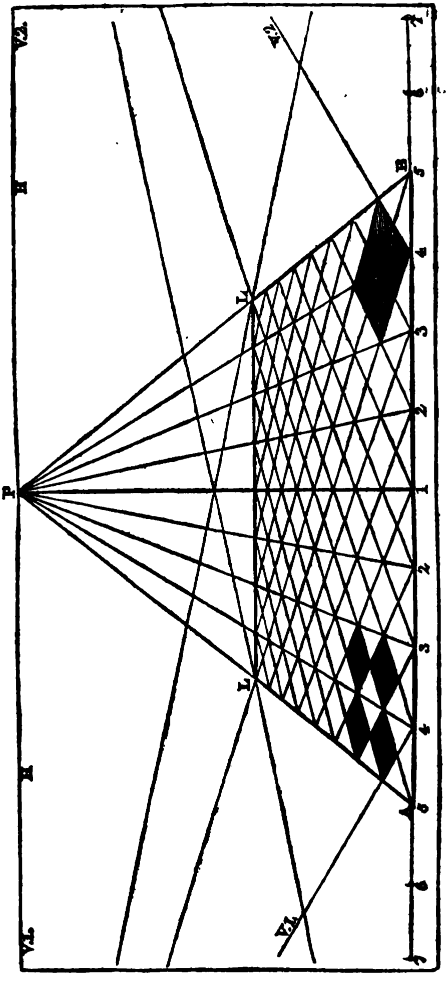
PERSPECTIVE RESUMED.

After the student has in some degree subdued what perhaps at first seemed obstacles, a little knowledge of outline and of perspective will have been acquired, enough to have established the fact, that their being studied simultaneously is essential to advancement in the art. It will have been seen that whenever a box, a table, or a house, presents two sides to the eye, each side must have its vanishing point, and that it is by ascertaining the respective angles for each side that the truth of representation depends. The following method of proving this from an object in nature may be adopted:—At the height of the eye, attach to a staff which you hold in your hand, a yard or two of thread. Select a station in front of one of the angles of a detached house, so that two of its sides are visible. The eye should be kept steadily towards the same point. Now, if the staff be held a little to the right in front, and the thread be extended with the left hand straight across, it will represent the horizontal line, and the point of sight will be on it immediately facing the person making the observation. By raising this thread with the left hand, while the eye is kept stationary, and at the same time moving the staff nearer or more distant, sidewise, till the inclination of the thread is in agreement with the inclination of the tops of the roof, windows, and door on one side of the house, the termination of the lines so formed will be where the thread is attached to the staff. This termination is the vanishing point. The architectural regularities on the other side of the house must then be traced in a similar manner to their vanishing point on the horizontal line. Let all this be done deliberately, and it will show that whatever may be the difference in the dipping of the thread on the respective sides of the house to their vanishing points, they will be comprehended in an angle of 90 degrees, taken at the station.

On such occasions the point of sight is in the object viewed, and perhaps in the centre of the picture; in which case, its base, or width, regulates the station, and the vanishing points are on each side of the point of sight at the same distance as the station. This may be exemplified in the different diagrams, by placing one foot of the compasses at P, and extending the other to S, when, by sweeping an arc from S, it will intersect V 1 and V 2 on the horizontal line. Perhaps it would here be useful to repeat that which has already been explained, that in the diagrams, such for instance as Fig. 17, the S is placed for convenience higher up than it ought to be; its real position being at the lower point of the equilateral triangle, on which all sketches are constructed. If the station S be removed from the angle of 60 degrees O, the object is viewed at a different angle, which causes a diminution on one side and an increase on the other, equal to 90 degrees; that is, the decrease in the angle on one side of the perpendicular, is made up by the increase on the other side to an angle of 90 degrees, taken at the station on all occasions.

Pavement in Perspective.—Fig. 18 is illustrative of the manner in which a regularly constructed pavement, with the corners of the squares towards the spectator, is put into perspective. This diagram should be particularly observed, as it forms a basis on which a variety of objects may be easily subjected to the rules of linear perspective. It is

Fig. 13.



PAVEMENT SEEN IN PERSPECTIVE.

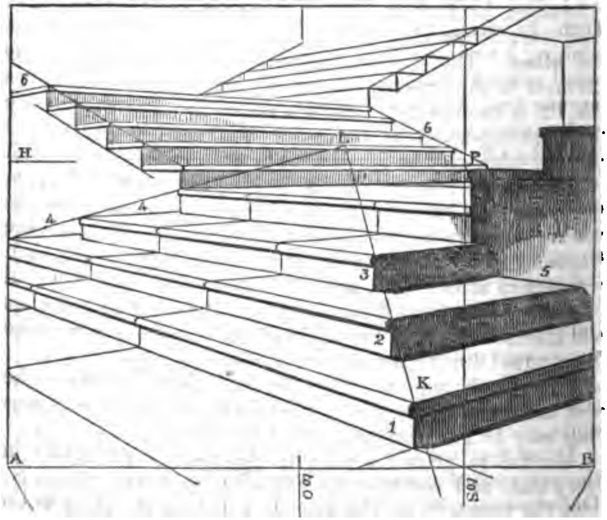
also calculated to give much pleasure in the drawing, by its simplicity, by the fitness of the parts, and by the conviction of its just representation of nature. To prevent any disappointment, the means are now described by which a diagram the size of the annexed may be drawn; all the minutiæ must be carefully attended to.

Draw the base line across the paper, by the straight-edge. At about the middle of the drawing-board determine the centre at right angles, and draw the line from top to bottom of the drawing-board. From the centre intersection at 1, measure off and mark with the compasses, without piercing the paper, twelve equal spaces on each side. Then determine the horizontal line H, and draw it across the paper parallel to the base AB: to be certain of this, measure the spaces between the extremities, which must correspond exactly; then take five divisions on each side of the centre mark 1, for the width of the pavement, and draw the base line from 5 to 5, that is, AB, in a strong line; then take the angle of 60 degrees, which forms an equilateral triangle with the base, on the perpendicular beneath, as heretofore, at O, and mark the point of sight on the horizontal line P: Take the angle of 90 degrees, that is, of 45 degrees on each side of the perpendicular at O, and project the diagonals on each side till they intersect the horizontal line at V1 on the left, and V2 on the right. Ascertain the correctness of these points by placing one foot of the compasses at the point of sight P; and extending the other foot to O, sweep a semicircle, and the points of distance will be intersected exactly; that is, they will be equidistant from P: Next, place one foot of the compasses at 1, and mark off on each side upon the base line the distances from P to V1, and from P to V2: Draw the perpendiculars at the extremities of the base line, which must intersect the points of distance: Draw the visual rays from the numerals 5 to 5 on the base of the pavement to the point of sight P; From the angle formed by the perpendicular at the extremity on the line of numerals A, draw the diagonal to V2, and from the angle formed at the opposite extremity of numerals B, draw the diagonal to V1; these diagonal lines will intersect the visual rays P5 on each side at L, and intersect each other on the centre visual ray 1 P: Draw the horizontal line from one intersection L to the other L, and the perspective view of the square pavement is determined. At this stage of the drawing, observe if all be correct; the diagonals should intersect the visual rays 5 on each side of the pavement at LL, so that they be in a true horizontal line. Also observe if these diagonals intersect each other on the centre ray 1 P; these must be accurately drawn, or the result will not be satisfactory. If any incorrectness be discovered, the error probably will have arisen from not having placed the point of the pencil in the marks made by the compasses, or from not having held the pencil so that the lines were drawn close to the straight-edge from one end to the other. The student should endeavour to preserve a neatness in the drawing of this diagram; and, to assist in this, it is recommended to fix a needle or a pin firmly into the drawing-board at the point V 2, against which the straight-edge may be pressed, while the other end is placed at the farthest numeral on the line A, so that the point of the pencil will enter the mark made by the compasses, and thence be drawn truly. With these precautions, draw the diagonals from the respective numerals to V 2, crossing the perspective square only, until 4 on the right. If this have been properly attended to, the diagonal from 5 on the left will intersect the opposite angle of the pavement at L, and the gradual diminution of the receding squares from L to 5 will pleasingly appear. Then fix the needle at V 1, and turn the drawing-board with the base line upwards, that the lines may be more correctly ruled from the compass marks. Be careful to press the straight-edge against the needle at every line, and continue, as before, to draw the diagonals from the numerals on the base line B into the point V 1, until the perspective pavement be completed, observing that the diagonal from the angle of the pavement B intersects the visual ray 5 P at L on the opposite side. Now, if all be carefully drawn, the diagonals will alternately intersect each other on the visual rays, and truly show the diminution of all the squares of the pavement, as seen with their corners to the front.

From this diagram the truths may be deduced—that every representation from nature, be it of buildings in a landscape, pieces of furniture in a room, or a machine of many complicated parts, will have its vanishing points in agreement with the angle at which it is viewed, and that these points will be on the horizontal line, while there is but one point of sight. It will also appear that objects standing on bases, regulated by such squares as are exhibited in Fig. 18, would be similarly operated upon by the laws of linear perspective.

Steps drawn in Perspective.

Fig. 19.



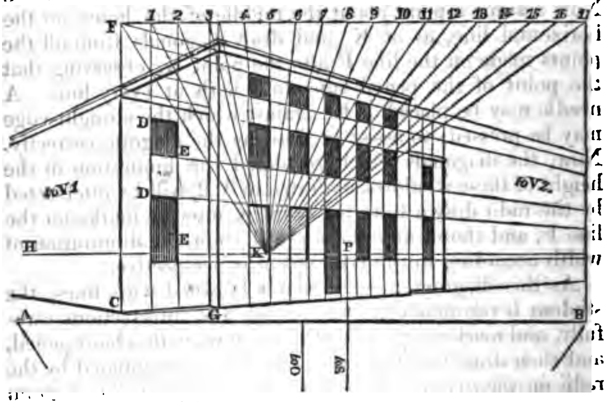
A flight of steps offers some peculiarities worthy of notice. In Fig. 19, the base AB regulates the angle of 60 degrees at O, perpendicularly placed beneath the centre. The removal to the station is marked below the base line *to* S, and perpendicular to the point of sight P. The projected lines of the angle of 90 degrees at S are drawn right and left, till they intersect the horizontal line, and there determine the vanishing points V1 and V2.

In the sketching of such a scene from nature, commence with the nearest perpendicular of the step 1, and proceed as follows:—Faintly mark the diagonal line that intersects the projecting corners of the steps on the same ascent, KL: Fixing needles at the vanishing points, against which to press the straight-edge, draw the base of the step 1 from V 1, then the line to meet the corner, next the base of step 2, then the line to meet the corner, and so on for the other steps on the first ascent: Place the straight-edge against the needle at V2, and into that point draw the base lines and the lines from the corners of the steps 1, 2, and 3, also the levels at the other extremity of this ascent of steps, 4: Turn the straight-edge again to V 1, and draw the corresponding levels where they meet the wall at 5. After the broad space above the fourth step, the levels of the steps become less, and, at the second step of this ascent, they are quite invisible, from being situated above the horizontal line: At this second ascent faintly draw the diagonals which intersect the corners of the steps, as at 6, and mark the perpendiculars: From V 1 draw the lines which indicate the edges of the levels to the corners of the steps; next turn the straight-edge to V 2, and draw the edges of the steps; then the perpendiculars, which will be regulated by the diagonal line 6. The third ascent is regulated by the proceedings that were observed at the first ascent, from their respective vanishing points.

Fig. 20, in next page, shows the method by which the situations of windows may be properly drawn in the representation of a house, seen obliquely.

Draw the base line AB: Find the angle of 60 degrees on the perpendicular from the centre, and mark the station S: Determine the horizontal line H, and the point of sight on it, perpendicular to S: Find the angle of 90 degrees, and draw the lines to the vanishing points V 1 and V 2: Draw the nearest perpendicular of the house C, and fix where the nearest windows are placed, also their height and width, DE: Draw these diagonals to the vanishing point V 2; they regulate the diminution of the heights of all the windows: Draw also the cornice and the base lines; then draw a fine line F parallel to the horizon, and touching the perpendi-

Fig. 20.



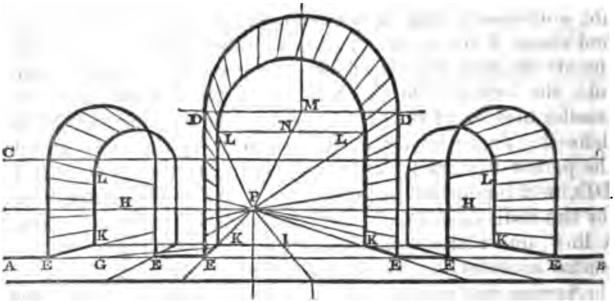
cular C; then, with the compasses, take the measure of the space between the perpendicular C, which is the corner of the house, and the edge of the window D, and mark it on the line F as at 1; then take the width of the window E, and mark it as at 2. It is better to have a second pair of compasses to prevent mistake in the alternate alteration that is required, or the space for the windows may be marked with the point of a needle on a piece of writing-paper, and then marked off carefully on the line F; then the compasses will mark the space between the windows only. The small projection which separates the centre from the wings must be noticed, as at G; then the space with compasses 4, then the window 5, then the space 6, then the window 7, then the space 8, then the window 9, then the space 10, then the window 11, then the space 12, then the window 13, then the space 14. This being the farther extremity of the centre of the house, the corresponding projection to G must be noticed, as being so much of the next space hidden behind the projecting centre; it will therefore be marked 15, then the window 16, then the space 17. These compose the spaces and widths of windows as seen in the front of the house; and it must be mentioned, that the points which have been made on the line F, must be perfectly true on the line, or the truth of the diminution will be impaired. Now assume a point about the middle of the house on the horizontal line, as at K, and draw diagonals from all the points made on the line F into the point K, observing that the point of the pencil runs into both at every line. A needle may be placed at K, against which the straight-edge may be pressed, to assist in drawing the diagram correctly. Now, the diagonals which regulated the diminution in the height of these windows, as drawn to V 2, will be intersected by the radii drawn from the point K into the marks on the line F, and those intersections will show the diminution of width according to the laws of linear perspective.

As this diagram may be found crowded with lines, the student is recommended to examine the intersections carefully, and mark the forms of the windows with a hard pencil, and then draw in all the perpendiculars as regulated by the radii on the diagonal lines. If in this state of the diagram there should appear any confusion, it will be far better to commence another; and the larger the drawing is, the less risk is there of disappointment. The side of the building, that is, the wing and the portion of the centre seen above, with the little projection at G, are drawn by diagonals to the vanishing point V 1.

The student is advised not to pass this diagram without having obtained a perfect knowledge of the principles by which the diminutions are regulated. Difficult as this may appear, it ought by all means to be attempted, for it cannot be too strongly impressed on the mind, that no perfection in drawing, no delicacy in finishing, nor boldness of effect, can atone for deficiency in perspective. When a little progress has been made in this, so that the judgment is prepared to understand the arrangements which objects must undergo to be correctly represented on a flat surface, a scene in nature can be sketched without the interposition of a difficulty. Linear perspective seems to communicate to the mind, while engaged in drawing, a confidence like that which is felt by a person who speaks on a subject upon which he has previously acquired a critical knowledge.

Fig. 21 represents a method by which to put archways into perspective.

Fig. 21.



The base AB, the horizontal line H, and the point of sight P, are determined as in the preceding diagrams. In this it will be seen, that, if the point P had been retained in the centre of the subject, the sides of each respective arch would have been alike; to obviate this, P is placed a little to the left of the centre.

This is a subject which may often be met with, and the student is advised to study such objects in nature, be they of one or more arches; ever remembering that the station must be preserved with the head towards the point of sight; the eyes only are to be turned from one part to another. The observance of this will teach the distance at which to take a station for such studies. If it be taken too near, too little of the subject will be seen. If it be taken too far off, then there will be more expansion than is required, and the subject will not show the minutiæ.

Suppose such an object as Fig. 21 to be in front of the student: The piers between the arches should be sketched as perpendicularly as possible, and the arches turned by hand; then the depth of the receding sides, as nearly as the judgment may direct; and as much of the masonry as may point out the perspective of the subject: Then, while all is fresh in the memory, attach the sketch to the drawing-board, and by the T square draw the base AB, the horizontal line H, the point of sight P, and the vanishing point V 2: Then, by the T square, correct all the perpendiculars and horizontals: Draw the line CC, which is the chord of the smaller arcs, and DD, which is the chord of the large arc, and observe that the perpendiculars intersect the line C, and those of the centre are at D: Then find the centre for the arc M, and describe it correctly from one perpendicular into the other: Do the same from their centres to the smaller arcs; and thus the superficies of the subject will be defined: Then draw the visual rays from the base of all the perpendiculars E, and from the intersections on CC and DD, to the point of sight P, which give the receding lines for the visible sides of the archways. If the piers be square, a line drawn from the base of the perpendicular of the centre archway E, to the vanishing point V 2, will give the perspective width of the receding parts. If the piers be one square in front, and two squares deep, mark off a square to the left of the perpendicular, as at G; and a diagonal drawn thence to V 2, will give the receding depth where it intersects the visual ray EP at K. At this intersection draw the horizontal line I; and where this intersects the visual rays at EP, as at K, raise the perpendiculars till they intersect the visual rays CP and DP, as at LL. Thus will the receding sides of the archway be determined. To find the arc at the farther end of the subject, draw the horizontals LL; and the visual ray MP, where these intersect at N, is the centre on which the arc may be described. The smaller arches are to be found by a similar process.

Now, the correcting of such a sketch by the application of the rules of perspective, will show the student where the eye and hand have failed in giving a faithful representation of the object. Therefore, again let the student visit the spot, taking a station strictly in agreement with that in the drawing, and compare the corrected lines with those which nature will present. Let all be rigidly examined, and the result will not fail to be satisfactory.

It is recommended that every opportunity should be taken to sketch such subjects from nature; they furnish excellent studies for linear perspective, and one such study would convey more information than the copying of a dozen drawings or diagrams.

BLACK-LEAD-PENCIL DRAWING.

When a few varieties of subjects shall have been sketched from nature, with the mind employed on the best means of conveying to the sketch-book what is seen, let the sketches be compared; let the character of the lines be examined, to ascertain if they express the intention, to adopt such as have meaning, and to reject those which may be vague. Improvement never fails to attend such investigations; they become necessary, since there can be no clear directions how a student should express with a pencil the complicated forms which nature presents to the view. A sketch, like a memorandum, should be made so as to recall the thought, but it must be given in the language of the writer. All persons who sketch have adopted some mode of their own, which habit has improved to various degrees of perfection. No one can have any just motive for imitating the style of another; it may be compared to the acquisition of a provincial dialect preparatory to studying the purity of a language. The delineation of characteristic forms with freedom and correctness, is a power not to be obtained by chance nor by purchase; but by patient assiduity, and judicious observation in frequent appeals to nature. It is always beneficial to become acquainted with any successful means by which others have attained excellence, and it is justifiable to obtain a knowledge of the mechanism which mingles with the art; but, as we have said, every one ought with diligence to form a correct style of his own; and the nearer he approaches nature in his representations, the higher is his excellence as an artist, and the more will his productions be appreciated.

Black-lead-pencil drawings have their admirers; they can be finished up to considerable neatness, or to powerful effect; and therefore a few hints respecting such use of the lead pencil are subjoined. The pencil should be of the best Cumberland lead, and it should not be cut to a point, after the first time, until the exhaustion of the lead renders it absolutely necessary. The blunted pencil, by being *waved* upon a form, is capable of giving to it any degree of shade. The term *waved* is not explanatory: the process is, passing the pencil backwards and forwards in zig-zags of convenient length, in such manner as not to repeat one marking on another, but so close as to produce an equality of tone over the space required. This uniform tone is called the *grain;* and by judicious waving, in different directions, any gradation of strength may be communicated. The point of the pencil is destructive to the effect alluded to, because it will give a line which repetitions only render more offensive.

The clearness of this grain produced on masses which have been previously drawn with a tender outline, is essential to the preservation of distances by gradations of power. It is the perfection of this kind of drawing, to effect as much as possible independently of outline, or the evidence of it in the process of waving in the masses. Thus, the most remote parts may be waved in, as if there were so little light on them that they would be indistinctly seen—the second plan waved in as if a greater degree of light, or rather distinctness, were cast upon it, the objects being more defined and proportionally stronger than the distance—the foreground waved in with the greatest degree of light cast on it, so as to render every part evident, by power and characteristic touch.

When the student shall be more particularly directed to this species of drawing, the remarks which are made under the heads Light, Shade, and Effect, will apply to this use of the lead pencil. It is presumed, however, that any attention to an inferior means by which to obtain knowledge, may be disregarded, particularly when the superior method is more practicable. The consideration of outline, as far as it is conducive to knowledge of forms, may therefore be continued, and light and shade reserved for practice with tints.

In examining a natural scene, it may be observed that all is void of outline, and that every distinct object is relieved from that which adjoins it, by a separation of light, shade, or other accidental peculiarity. In sketching, nevertheless, outline is adopted, because it is the only means of obtaining a knowledge of the forms, and the simplest means of detaching them; but immediately after the student shall have become acquainted with the form of an object, it must be considered as having been operated upon by light, and the portion of outline which is next the source of illumination, should be more tenderly defined than those parts which may be differently situated. Now, this attention to light and shade in outline is preparatory to the more correct representation of nature, and the student ought to be satisfied, that, in whatever may be attempted, time will not be lost in the endeavour to preserve the proper lights and shades. At first, these undertakings should be of the simplest kind: there is no production of bountiful nature that is not worthy of consideration, or that is incapable of yielding its reward to the attentive student. Suppose it to be the leaf of a willow, the elongated curve, with its smooth edges, and tapering vein down the centre, offer practice for command of hand in conveying the imitative lines to the paper, while a perfect knowledge of the character of the leaf is at the same time acquired. It is impossible thus to appeal to original nature, without obtaining valuable information.

The leaf of the elm, with its contracted curve, serrated edges, and many veins, offers subjects for practice and closer inspection of form. The oak, with its longer leaf and waving edges, presents to the investigating mind a great variety of form and character; but these leaves present themselves in many peculiar forms, that give an increased interest to the lines that may describe them. They are to be seen curved in a picturesque manner, twisted in fantastic shapes, and clustered beautifully. Let the student select from any tree a small sprig, having three or four léaves, and place it naturally in front of the drawing-board, as an object for study. Then attentively examine the position of each leaf, its graceful connection with the stem, and the insertion of the leaf-stalk into the wood. Such a tranquil investigation of the distinct parts of which the object is composed, has been observed to lessen a confusion of ideas that takes possession of a juvenile student, when as a whole it has been contemplated, or rather glanced at, with a fear of not being able to imitate what was seen. Why fear? why delay? has been asked. Not knowing where to begin, or not perceiving how to separate the parts, has been the answer. This was not deficiency in power of mind, but a seeming reluctance to call it forth. Nothing can be done while the eye is roving over the object; no beginning, no end appears. Let the mind be brought to act upon what is required; direct the attention to that part which may be deemed the principal, or the most conspicuous leaf upon the sprig; consider its position; observe if it project to the front, or laterally; what portion of the upper surface is seen; and if so, how it is curled to display any part of the under surface. When all that relates to the principal leaf has been thought upon, the part on which to commence is suggested to the mind, and the hand imitates that to which the eye is studiously directed.

The first leaf being lightly sketched, it is easy to add an adjoining leaf, and so on till all be on the paper. The student should then coolly criticise his work, looking over every part, to detect any deviation from the forms of the original. If this examination and correction produce likeness, let the lines and characteristic marks be drawn in with a firmer or bolder pencil; very often the most trifling touch in addition will communicate what seemed to be required to give character to a leaf. A weaker line on the side which meets the light, and the stronger line confined to those parts which may be opposed to the light, materially assist in giving satisfaction, from the spirit which such sketching imparts. The student is at all times advised to be sparing in the use of Indian-rubber; at times it is useful, but generally it is brought into action, because thought had not previously been sufficiently employed.

Fig. 22.

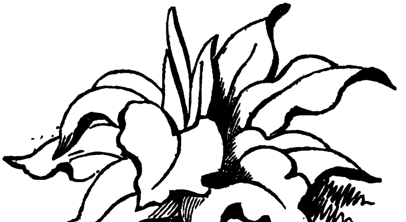


Fig. 22 may serve to convey an idea of what is intended by the preceding remarks. The light is from the left, on which the tenderest lines are preserved, while those opposed to the light receive a more powerful marking, with occasional increase of force. Such studies as these should be made in the fields, where there is not a hedgerow but presents numberless subjects, each with its form and characteristic touch—the plantain, the dock, and the thistle; the fern, the briar, and the thorn. The advantages to be derived from consulting these objects where they grow, must be obvious to every one who will admit that originals are superior to copies, which all prints and drawings are. The student can as easily copy from nature as from an imitation of nature; in the one instance the sketches are such as were dictated by love of the art, and so far are originals; in the other case, however closely the sketches may have been imitated, they are mere servile copies of what another thought to be representations of nature. The only method by which to produce a satisfaction that stimulates to exertion in drawing, is to study and copy carefully the characteristic forms of objects as nature presents them. Let the student be provided with two sketch-books, one for scenery, and the other for smaller studies, called "*bits*." That which is shut may serve as a seat for the draughtsman, while he has his pencil at work upon the other. In sketching a plant, first observe if the outline be smooth or rough; how the leaves project, recede, point vertically, or recline on each other. Endeavour to arrive at a comprehensive notion of the work that is to be done, including a perception of what is very appropriately called the feeling of the subject. Then commence by sketching the form of the principal or most conspicuous leaf with a tender line, and correct it, if required, without rubbing out, until the general form of the leaf shall appear amid the slightly sketched lines; this the mind will seize upon, in consequence of the likeness being perceived; then let this line be put in with a little more power, and with a handkerchief brush away the first trials. The leading feature of the plant being thus laid down, the rest, which are necessarily of the same character, will be easily executed, care being taken to observe from what part a second leaf may issue

Be attentive to the commencing line of each leaf, and proceed as with the first, till the whole group be sketched in. Do not neglect any part, nor conclude that enough has been sketched of a subject so simple, nor think that at another time it may be more carefully attended to; these are the causes of failure; no time is like the present; endeavour to obtain a correct outline, at the risk of being considered very slow. Let the object be well sketched, and rapidity will soon be acquired. When the character shall have been fixed, the detail will go smoothly on; the knowledge of the plant, with its peculiarities of growth, and its natural appearance, will never depart from the memory. With respect to indications of light and shade and touch, the soft pencil may be pressed with power on the shade-edge of the leaves, with occasional repetitions, or the thickness of touch may be doubled, to indicate curves, or the curled edges of leaves. At all times give a boldness of line with a pencil rather soft, because it can be used with more freedom, and will communicate more spirit, than a hard or fine-pointed pencil. The lines of which a sketch may be composed, will appear fine or coarse, more by a comparison between the strength of the lines on its light and on its shade lines, or touch, than by reference to ordinary thinness or delicacy of line. This is mentioned to induce a boldness of outline in whatever may be attempted from nature, since it admits of freedom in execution, and expression of character which can be recognised, while the efforts with a fine-pointed pencil produce a meagre and spiritless effect.

Fig. 23.

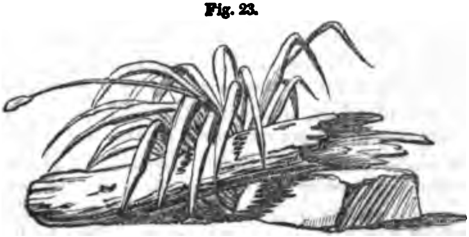


Fig. 23 is a combination of rural objects that may frequently be observed on the road-sides. These are simple subjects, but they possess character, and such as artists avail themselves of as accessories in landscape painting. Every production of nature has its value; the smooth edges of the coarse grass, as the blades curve in various directions, are worthy of the attention of the student, presenting a variety of sweeps and accidental forms that will assist in giving freedom to the use of the pencil. The same tuft of grass will furnish enough for several studies; on the different sides new combinations become visible, and each with its share of interest. On such subjects select the blades of grass which are most prominent, let the character be clearly defined, and let those curves which project be distinguished from those which recede or fall sideways; without this, the whole will be a mass of confusion, which no after-corrections can render clear. These may appear tedious to the ambitious student, but they teach how essential patience is to the obtaining of a correct sketch. It is by searching for the various beauties, and carefully copying them into the sketch-book, that the characters can be appreciated; and it is by reference to those judiciously selected transcripts from nature, that the remembrance of their peculiarities is preserved.*

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* Mr D. R. Hay, in his excellent work, "The Laws of Harmonious Colouring," has the following practical observations on the method to be followed by young men in gaining a knowledge of drawing, with reference to patterns, decorations, and ornamental designs:—"The course of study I am about to point out is within the reach of all—even those in the most humble situations of life. They will find it of easy acquirement, and a source of continual enjoyment, in the improved medium through which it will lead them to view the most ordinary productions of nature. She shall be their instructor; for all that I can pretend to do, is to point out to them a practical mode of receiving her lessons. To the uninitiated I therefore address myself; and let them not be dissuaded from beginning, by having no predilection for the study—the more they persevere, the more they will love it.

In the first place, your attempts ought to be of the most simple nature, and on as large a scale as you can conveniently adopt; therefore begin by procuring a black painted board or slate, of from two to three feet square, and with white chalk practise the drawing of squares, circles, and ovals, without any guide to your hand. You may make yourself copies of these figures by the ordinary rules. When you are tolerably perfect at these, upon the proper combination of which depends all linear harmony, you may practise in the same way triangles, hexagons, octagons, and such other figures as arise from the various combinations of the straight line. Next, by your circular and oval lines, you may form crescents, circular and flattened volutes, regular undulations, and other figures, which arise out of their various combinations, first making an accurate copy to yourself of each figure by measurement, and continuing to practise until you can form it by the eye with perfect ease. Avoid forming your figures by little bits at a time; do each line as much as possible by one sweep of the hand. When you find yourself pretty perfect in this kind of practice, I would recommend you at once to draw from nature. You may take for your first subject a cabbage leaf, the larger the better; and persevere in copying it, full size, until you can represent it accurately in outline, with its principal fibres. You may then vary your practice by

CHARACTERS OF FOLIAGE.

In an elaborate work on Landscape Drawing, published by Leigh, London, there are the following remarks on the characters of foliage:—"When a tree is near the eye, the leaves are distinctly separated from each other; their particular form, the insertion of their stems into the branch, the perfection of their local colour, are all apparent. Remove this object to the second plan, the foliage assumes masses, retaining the character, but the tone is altered; the separation of parts is no longer evident, yet it is recognised as the object previously inspected. Remove it still farther from the eye, the masses assume a uniform tone, relieved by in-

other simple subjects of a similar kind, until you find you can do them all with ease.

Before endeavouring to draw more than one leaf at a time, you must know a little of perspective. The most simple mode by which you will attain such knowledge of this art as will be most useful for your present purpose, is to hang a circular object, such as a hoop, between you and the window; set it a-moving gently round, recede a little from it, and you will find that, as one side of it retires and the other comes forward, the circle which it describes becomes narrower and narrower, until it disappears altogether, and leaves nothing but a dark line, as if a stick instead of a hoop were hanging before you. I recommend you to do this between you and the window, because the hoop will appear like a dark line, and you will thereby be better able to mark the change that takes place in the shape of the circle. Fix it in various positions, and draw from it, and observe that it is a different figure from an oval. A knowledge of this simple fact is all that you require of perspective in the meantime. You may now hang up your cabbage leaf, or that of any other large and well-developed vegetable, and you will observe the same change in its figure as it turns round. Make an outline of its shape while its front is half turned from you, then bring it from between you and the light, and place it where the light will fall upon it, with its face half turned from you as when it hung before the window. Take your outline, and within it draw the principal fibres as you see them. To do this properly will require a great deal of practice, but it will pave the way to your being able to draw the most complete groups of flowers and foliage that can be placed before you. You may now hang before you a small branch of any tree or plant with two or more leaves upon it—the larger the leaves are, the better—and endeavour to make outlines of them, varying their shape according to their perspective, as already described; be particular on this point, for a great deal depends upon it.

You may now lay aside your chalk and slate, and provide yourself with a few sheets of common cartridge paper, and some pieces of common charcoal—that made from lime-tree is the best. Stretch a whole sheet of your cartridge paper upon your board by a wafer or a little paste at each corner. Place before you a cabbage, cauliflower, stalk of dock blades, or any such large vegetable, and they will be more picturesque if the outer leaves are hanging loose. Copy these carefully in outline, using your charcoal gently, that any inaccuracy may be easily dusted off. A large thistle with its foliage is likewise an excellent example, but more difficult. Indeed, you cannot go wrong in your choice; hemlock, fern, nettle, are all worthy of your study. From these the richest and most effective of Gothic ornaments were taken by our forefathers. The more you study such subjects, the more beauty and grace you will find in their forms."

dications of light and shade, softened by the intervention of atmosphere. Remove this object still more distant, it is rendered indistinct, and forms a portion of the mass of light or shade in which it may be situated. Nature presents these appearances to every inquiring eye, and the mode of representing them must depend on the perseverance of those who delight in transcribing them into their sketch-books." This is so just, that the student might imagine the tree first inspected retiring gradually into indistinctness, and displaying, as it receded, the due portions of aërial effect. It also teaches how tenderly the outline must be expressed in extreme distance, how much more evident the marking may appear in the mid-distance, how much more defined the form becomes by light, shade, and markings, on the second plán, and how distinct the expression of character and power of touch ought to be, as they approach the eye or the foreground.

Fig. 24.

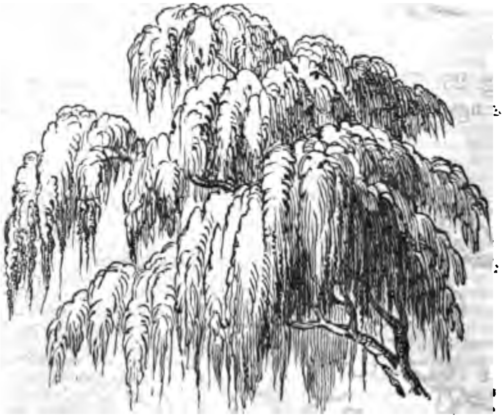


Fig. 24. The willow has been represented by perpendicular markings, terminating in a point, to give the idea of its pendant foliage. A broad mass of light is usually preserved, and an increase of markings is given to one side of each subdivision of foliage, with considerable power of charac-

teristic markings on the shade-side of the tree, besides an occasional repetition of touch for effect.

Fig. 25.

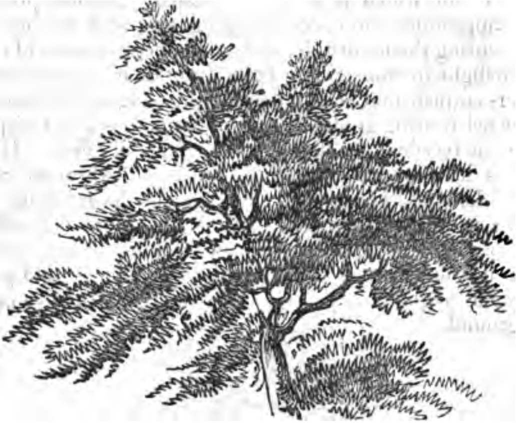
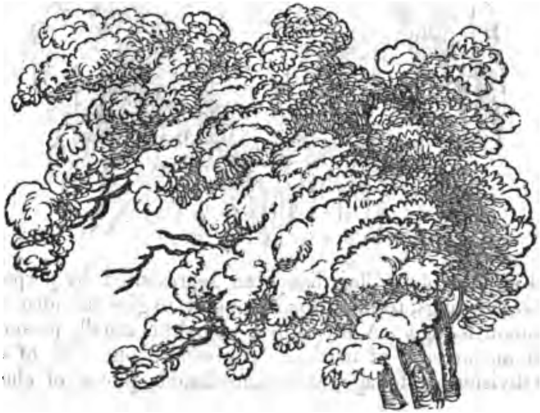


Fig. 25. The fir has been represented by short angular markings connected with each other, much like the scratch

Fig. 26.



with a pen to obliterate an incorrect word. These markings are continued in agreement with the projections of the branches, are repeated with increased power on the shade-side of the tree, and a few slight markings are given on the extremities, and beneath the masses, to indicate foliage on the farther side of the tree.

Fig. 26. The elm has been represented by escalops in a semicircular direction, so distributed as to give the idea of thick foliage; the masses are separated by detached markings, indicating the same character, and their rotundity given by repetitions, with occasional increase of power. A few dots on the extremities will relieve the harshness of the outline, where the escalops are too evident or regular.

Fig. 27.

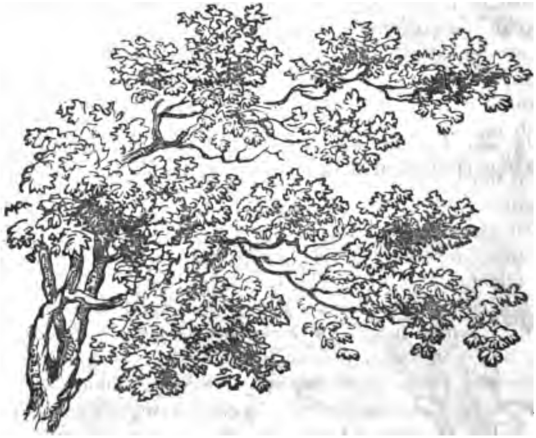


Fig. 27. The oak has been represented by a character which partakes of angular and broken circular markings, intermingled with dots and sharp touches. The lighter parts are pencilled tenderly, and the shade portions are repeated upon, with additional power given by sharp angular markings.

These varieties are introduced for the purpose of showing the means which have been resorted to by those who attempt to express the characteristics of foliage with the black-lead pencil. They exhibit principles on which the student may proceed to sketch from any of the trees. Suppose one to have been selected as a study suited to the foreground of a drawing, where its peculiarities are required to be displayed. Let the growth of the branches be observed; a straight line is rarely to be seen, nor do they spring from each other with uniformity; there is usually an undulating line, often graceful, or a wild luxuriance, ever pleasing, in these supports to the foliage. Let the effect of the leaves which may compose a principal mass be indicated, not the outline of a leaf or leaves, which would prove labour in vain, but what is seen as much by the imagination as the eye; that is, not the detail, but the effect. Perhaps the recollection of a characteristic form, such as in the foregoing diagram, may assist in determining how to commence; at all events, let the student proceed to sketch from a tree in nature the principal mass and the projecting boughs; then pause, and examine if the lines give the idea of the objects. If too much regularity appear, destroy it by projecting a touch or two on the extremities, and attack any formality by additional markings, in conformity with the character adopted. Oftentimes the mere waving of the pencil, or a powerful repetition with the broad point, will not only remove a monotonous appearance, but communicate characteristic spirit and effect.

Experience has shown, that, while students could sketch the extremities of various branches of trees with good effect, they have felt embarrassed in giving a corresponding correctness to the mass, or masses of foliage, belonging to the same tree. This has arisen from not having duly considered that each mass required to be treated as a centre, from which the character should be spread towards its respective boundary, with such discrimination as to obviate all appearances of formality, and then, by the introduction of repetitions of markings and touches, to arrange the separate parts, so as to preserve but one central mass, however it might be situated. A few trials, with the observance of these particulars, will remove the difficulty. Sometimes the student will find that the circular escalopings of the sketch, as they are added towards the edges of a central mass, appear unpleasingly regular, having a likeness to rows of scales. This has arisen from continuing to give the forms with the pencil equally pressed on the paper; it should play freely, with occasional breaks, or dottings, that imply the intended character rather than its too evident detail. These are methods that may be resorted to when no other may occur to the student, who, after all, must be chiefly guided by feeling and judgment when the objects are before him.

It will be proper occasionally to show such sketches to a friend, in order to have the benefit of his remarks. Although the individual thus put into the place of critic may be unacquainted with art, he can scarcely fail to distinguish the truth or falsity of the drawing to nature. And where such individuals can conscientiously give a little approbation, it may be of important service in stimulating the student to further exertions.

During the study of perspective and outline, the black-lead pencil is the best instrument which can be used, and for sketching it is indispensable. But when light and shade are to be added to outline, this instrument yields to the camel-hair pencil, which, by means of tints, can give a representation of those natural appearances, in a much more simple and easy manner. Some explanation of what is meant in art by *light and shade*, will form an appropriate introduction to the subject of *Tinting*.

LIGHT AND SHADE—TINTING.

In every scene, during the presence of light, some parts fall immediately under the effect of the light, while others are thrown into shade. In art, advantage is taken of this mixture of light and dark parts, not only for the facility with which it enables the draughtsman to separate the parts of a scene, but for the agreeable effects which may be produced by the judicious association and distribution of the light and shade. In the representation of a round object, it is only by a careful disposition of the light upon the convex part, and the truth of the attendant reflected light and shadow, that the appearance of roundness is communicated. The means by which the effect of light and shade are to be produced by tints, are now to be described. First, with regard to the preparatory steps in the process.

The student should be provided with the best *hard* drawing-paper, which may be had of various size and substance. For subjects in which minute and fine delineation is required, the paper should be smooth on the surface; but when the subject is of a rural character, in which all the shagginess of nature is to be introduced, the paper should be of a rough description, for roughness of surface in such a case will assist in giving truth to the representation. Drawing-papers have frequently a greasiness of surface, which prevents a tint from being spread with evenness; the slightest infusion of gall into the water with which the tint is made, will remedy the defect; or the surface of the paper may be sponged with the gall and water before fastening it on the drawing-board.

A few camel-hair pencils must be provided; say two *flat inch tins*, to distribute a tint over a large space; two *swan-quills*, to wash in smaller spaces; and two *hen-quills*, to pick in minute parts. The qualities of these denominations of hair pencils are various. A bad one is far worse than a bad pen; with this, it may be possible to write, but with a bad pencil, every effort will be foiled. A proof of the quality may be thus made prior to purchase: When dipped in water, if it spring into a line with the quill and retain its point, select it; if it spread into two or more points, reject it; and observe, that it is not requisite for a pencil to be touched two or three times on the edge of a vessel containing water, nor to be passed between the lips, since these might give a point to a bad one. The student should have a few small delf saucers, in which to mix the tints, and two cups or glasses, to contain water; one to be preserved pure, and the other in which the pencils are to be washed.

The tints may be made according to the taste of the student; from Indian-ink, a black; bistre, a brown; or neutral tint, a grey; they are alike capable of communicating smoothness and spirit. With reference to further advancement in the art, it is proper to state, that the light and shade of a landscape in the neutral tint, is a basis on which the hues of nature in their variety may at a future time be added. The light and shade in Indian-ink cannot be thus used as a basis, because under colour it is injurious to transparency. The light and shade in bistre is rich in mass, powerful in touch, and susceptible of giving transparency, with a high degree of finish. The student may adopt either, as the succeeding hints will apply to one as well as the other. Cakes of Indian-ink, of bistre, or of neutral tint, may be had of the venders of colours for artists. They should be free from grit; and when they are well ground and duly incorporated with gum and white sugar-candy, they will deposit no sediment.

Terms.

The following are the principal technical terms used in reference to delineations in light and shade:—

Outline implies form of objects, whatever may be the means of separating one from another.

Distance, the parts most remote.

Mid-distance, parts less remote.

Foreground, the part immediately in front; nearest.

Plan. A landscape may consist of many plans; they are reckoned from the foreground, which is the first plan. The next mass in gradation of distance is the second plan, and so on to the different varieties, of which the mid and extreme distance may be composed.

The Principal is that part of a subject to which the eye is intended to be attracted; the chief object.

Breadth of light is that portion of a subject on which the greatest brilliancy is spread.

Subordinate lights are smaller portions of light, or clearness, to diversify or enrich the subject.

Catching lights are the edges or portions of objects touched with brightness for relief.

Reflected lights are such as appear on the shade-edge of a circular object, occasioned by the light playing round it, or when an object is reduced in its strength of shade by the vicinity of a powerful light.

Half-tint is the medium between light and shade.

Shade is the part opposed to the light.

Shadow is the obscuration of light by an interposing object.

Mass is a bold or broad proportion of a subject, either of light, half-tint, or shade.

Spottiness is a part or parts either of light or of dark, too conspicuous to agree with the situation in the scene. The correction of such spottiness is necessary to the preservation of keeping.

Keeping is the preservation of light or shade, in agreement with their degree of remoteness.

Contrast is opposition, generally, either of line, light, or shade.

Effect is the result of the general combination of efforts, and the impression that may be made on the eye or mind of a spectator.

A tint is made by touching the cake of colour in water, rubbing off a small quantity in a saucer, and then reducing it with pure water to the stain required.

To *wash in, or over*, is, with the pencil moderately charged with tint, to commence at the most convenient part, and by slow movements to spread it equally, observing to supply the pencil so as to keep it charged with tint as equally as possible.

To *soften off* is to reduce the edge of a tint by exhausting it with the pencil, and then with another dipped in pure water, to continue to act on the edge of the tint, till it is gradually lost in its approach to the clean part of the paper.

To *blend* is a similar process, as when one tint is softened off upon another.

Making out is the giving of distinctness to objects, either by outline, tint, or touch.

To *pick in* is to fill up small parts, so as to restore evenness to a broad wash, by neatly covering neglected parts or offensive lights.

Sponging is the restoring of evenness to a broad wash, by filling the sponge with water, and gently passing it two or three times over the *whole of the drawing*, observing to keep the sponge clean, so that the lights may be preserved by carefully cleansing them while the surface is wet.

Taking out is the removal of any part or tint which may be too powerful, or where additional light may be required. Thus, with a pencil, neatly apply pure water to the place, and just before it evaporates, or is absorbed, press it with a clean linen rag; if this do not take up enough of the tint, pass a crumb of bread gently over the place; if it be desired that the paper should be entirely cleared, apply the Indian-rubber carefully, so as to do the least possible injury to the surface.

Touch is the application of powerful tints to produce decision, character, or effect.

The frequent and unavoidable use of these terms in the following pages, renders it necessary that they should be fully comprehended, or referred to when they occur, in order to prevent mistake.

Examples in Tinting.

The relief of an object depends on the just arrangement of the light, the due management of the half-tint and shade, with the proper introduction of the shadow.

Fig. 28.

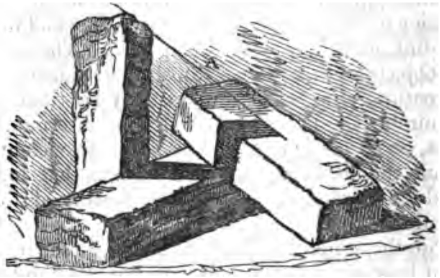
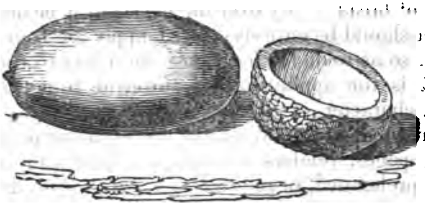


Fig. 28 represents three rude stones full in the light, the line A showing the direction in which it falls. The shade side of two, and the end of the third, show a play of light toward the lower parts, which is to be observed in nature. The shadow is marked stronger beneath, while that which is cast on the inclined stone is strongest at the base of the upright stone, and becomes lighter as it falls on the varying surfaces of the others.

Fig. 29 represents an acorn dislodged from its cup. The illumination is from the left, and falls on the rotundity of the acorn, the greatest light being on the most prominent part. In this case, a slight portion of half-tint is placed along the upper edge, while the under side gradually approaches through half-tint to shade, and then softens

Fig. 29.



into reflected light on the lower edge, which contributes to the character of smooth roundness, the power of the shadow beneath assisting in giving effect to the object. The light operates in the same manner on the cup, being cast on the advancing part of the hollow; its shade is cast on the receding part opposed to the light, on the same principle that the exterior of the cup is treated, while the shadow relieves the half-tint, as in the previous instance. These plain and circular objects are introduced to call the student's attention to such natural objects, in which it may be there observed how admirably the lights and shades are intermingled with half-tints, so as to obviate all harshness or violent opposition, while the shadows give a due effect that harmonises the whole, and renders the minutiæ worthy of the closest investigation.

Suppose the student to have made a sketch of such an object, at least six times the size of Fig. 28, and that it is fastened down on the drawing-board, a few small saucers and two vessels containing pure water on the right hand near the pencils, with the window on the left, so that the sunshine does not fall on the drawing-board: Let a tint be made, according to the previous directions, from either of the cakes before mentioned, and of any strength the student may think proper. Mix it well with the pencil to be used, and always let that be rather larger than might seem to be required; say, a swan-quill. The pencil is properly charged for use, when it has been stirred into the tint and gently touched, or passed two or three times on the edge of the saucer. This must be done carefully, because, if the pencil contain too much tint, there is a difficulty in spreading it neatly, and the edges will be hard. If the pencil contain too small a quantity, it will be impossible to spread the tint. If the space be large, it will require a little experience to keep the pencil equally charged with the tint.

Whatever may be the tint chosen, it must be washed over all the parts which do not receive the light. Thus, with the pencil charged with tint, as before described, commence at the top of the perpendicular stone, fill in the form, and proceed by slow motions downwards, so as to keep the floating or lower edge of the tint constantly being acted upon by the pencil, while it is distributing the tint neatly to the shapes required. The pencil must not be returned to repair omissions, as that would destroy the evenness of tint; the parts should be washed in with correctness at the first. The pencil may then be carried across the shadow to the shade of the flat stone and its shadow on the ground, with attention to the edges; then the upper surface of the diagonally-placed stone, with its shade and shadow. If these spaces be well washed in, they will appear of one uniform power of tint. When it is perfectly dry, strengthen the tint in the saucer by an addition of colour from the cake; this increase of power to the tint must be judged of by experience in its application over the tint first washed in. If the subject be examined, it will appear to consist of three gradations of tint; that which has been spread is the first, as on the upper surface of the diagonally-placed stone; the second gradation of tint appears on all the other shaded parts, and the third gradation is confined to the shadows. The student will discover, that, if too much colour be added to the first tint, it would produce a harsh effect; and if too little be added, the effect would be deficient: in either case, the due gradation would not be observed. Experiments may be made on a piece of paper, till the proper strength of the tint has been ascertained; it may then be applied to the shades and shadows as before, but omitting the upper surface of the diagonal stone. When this is perfectly dry, the tint must be again strengthened to the third gradation of power, with the same precautions as before, and with it wash in the shadows, keeping the edges of this tint rather within the boundaries of the preceding.

The effect of these tints will be feeble or spirited, according to the chosen power of the first tint; but the truth of representation will appear only in the gradations of tint having been well chosen. With respect to Fig. 29, the rotundity will require some attention to the blending of the tint. To facilitate this operation, the student is recommended to put a second pencil on the end of the pencil-stick, which, being kept wet, can readily be turned to soften off the edge of a tint washed in by the other pencil.

After such a subject as this has been sketched, with a tint which may be called the first gradation, wash in the broader space of the acorn, and, turning the pencil quickly, soften off the edge of the tint towards the middle; then, while all is wet, wash in the upper or narrower space, and soften it off toward the middle also. This, to be properly done, should leave a streak of clean paper on the most prominent part of the rotundity; and towards each edge, the tint should appear perfectly gradual and soft. Nothing but practice can give the certainty of success in softening off; if too much water be retained in the clean pencil, it is given out whenever it comes in contact with the tint, and prevents the softening of its edge; if too little water be retained, the pencil will not distribute the tint, and the edge will remain rugged. The appearance of roundness can be produced with a number of tints, each washed carefully within the boundaries of the preceding wash, so that the gradation is perfectly preserved; but it is a tedious process, allied to what is called *niggling*. When the first tint shall have been washed in, the second degree of power must be washed on the lower or broad space of the acorn, and gently touched along both edges, to preserve the gradation towards the light, and also that towards the reflected light. When dry, the third gradation of power may be touched along the shadow. The cup of the acorn requires similar treatment. If, when all is perfectly dry, the softening-off do not appear so smooth as it should be, a smaller pencil, with a subdued power of tint, may be neatly touched on such parts as appear uneven, or the effect of the roundness may be increased by touching over the shades till perfect, remembering to preserve the degrees from the high light, or clean paper, on the prominent part of the acorn, to the half-tint, thence into the shade, and thence into the reflected light beneath, which is relieved by the stronger tint of the shadow. In the correction of any errors that may be made in such sketches, the student will find great benefit, as each correction he makes will be apt to put him on his guard against similar errors in his subsequent attempts.

Mass, Half-Tint, and Shade.

Suppose such a scene as Fig. 17 to have been sketched, and that the student is disposed to give effect to the outline by a few tints: Let it be considered under what circumstances of light it has been seen in nature, or under what circumstances it might be seen. Imagine it an evening effect, the sun having descended behind the broad mass formed by the castle and trees; these, on different broken surfaces, constituting the second plan; beyond which is a mid-distance terminating in water and remote hills; the foreground composed of a rude mass, with rock and bushes interspersed. With this outline the student is presumed to be familiar, and he will perceive that, by placing the light behind the principal objects, an opposition will be established that must give a character to the whole. Thus, the principal will be in half-tint; the light brightest behind the castle, and gradually subdued along the distance; the foreground powerful, so as to relieve the half-tint of the principal, and oppose the distance: thus the gradations or keeping will be preserved, and effect given to the subject. Taking the following hints, let the student attempt the subject, first on a small scale, to become acquainted with the process, and afterwards on one much larger, for improvement. With the first gradation of tint, as in the preceding cases, commence at the top of the tower, and proceed downwards by slow movements, so as to preserve the outline, sweeping the pencil round the masses of foliage, and covering all the second plan, including the small tree which projects upon the distance; continue the wash over the foreground, except the edge where the pieces of rock are situated; these may be omitted, to relieve the mass from the second plan. When the tint is dry, make the second gradation of strength, and wash over again the trees and the ground as which they are situated. Then begin on the left on the foreground, and wash over the mass till within a little of the lights which were left untouched with the first wash. In these lights, and in repetitions of wash towards them, be careful not to let any perpendicular shapes appear; any promiscuous irregularity of form will better express ruggedness of surface. When this is dry, reduce a little of the first tint with water, and wash in the distant hills; then reduce the tint yet more, and with it wash in the space for the sky. As this may represent clouds, an even tint is not of material consequence; the pencil therefore should have less tint in it than usual. Begin at the angle on the left hand, and wash over the space, leaving such parts untouched as fancy may select, occasionally touching the extreme point of the pencil in the pure water, so that the tint may become still weaker as it approaches the part just above the castle. If this be well done, whatever may be the forms left untouched in the sky, the appearance will be that of a light or tender tint getting gradually weaker in a diagonal direction towards the chief light behind the castle. If it have not this appearance, retouch the tint along the upper part with tender tints, so as to produce no harshness nor unseemly forms, until the gradation from the angle on the left to the chief light is produced. The pieces of rock and rough surface of the foreground may require to have a few strong spots or touches, to force it in front of the second plan.

In this state the drawing would exhibit some effect, and might receive any additional washes or touches that may be suggested by the taste or the judgment of the student. After obtaining a knowledge of the distribution of the tints in their gradations, let the subject be drawn again considerably larger, and let the student investigate the general principle which regulates the proposed effect, and reflect on each particular part of the process, so as to comprehend the motive for every application of tint. When the tints are washed in, let the drawing be placed at some distance, where it can all be seen at once, without the surrounding objects interfering with the view. At this due removal, which is regulated by the size of the drawing, the gradations of distance, and the keeping, will more clearly show their correctness or inaccuracy. If the drawing be large, the flat tints on the second plan will tamely express masses of foliage, or the union of many trees, and the castle will require some characteristic markings. The black-lead pencil may be used upon the tint to indicate a variety of form on the building, or to separate the mass into trees of various heights, and these will serve as guides for the introduction of repetition of wash or touch. This proceeding implies finish, and may be carried to the extent dictated by the judgment of the student; but it must ever be borne in mind that breadth of effect is injured by every addition that disturbs a mass. Variety may be introduced, so as to attack a monotonous space or mass, without destroying it. Whenever it appears that more is required to complete the drawing, and the improvement is not suggested by a glance, desist immediately; put the drawing on one side, and engage on something else. In a few days, on recurring to the subject, it will be seen with a "fresh eye;" new ideas will arise; a little will be added, or a little power will be reduced, so as to effect an improvement which no straining of the faculties in the former instance could have produced. A drawing may thus be subjected to frequent revision, and assisted as the advancing judgment shall direct.

Suppose such a subject as Fig. 16 be sketched, for the purpose of study in breadth of light, the opposite of the last effect: Let a tint be made less powerful than the first gradation — such a tint as might represent clouds that were not gloomy—and with it wash over the space for the sky, preserving the forms of the trees, and softening off the tint in a diagonal direction, so as to leave the light along the horizon, with the greatest breadth on the right. When dry, repeat a few washes on the angle towards the left and along the top, so as to produce a gradation of power from the top to the horizon, and it will give the effect of retiring or keeping. If the tint has not been washed in with evenness, endeavour to convert any conspicuous form into a cloud, by picking in on its edges a corresponding tint, so as to make it form part of another more appropriate shape. Then, with that power of tint, considered as the first gradation, commence at a part not so high as the gable of the cottage, upon the trees, with an irregular form, distinct from a straight line, and continue the tint over the trees beneath, to the line of ground on which the cottage stands. Begin again at the lower part of the base beneath the cottage, and wash in the tint up to where the ground line before mentioned joins the boundary of the subject, and continue to wash in the tint, in agreement with the form of an indicated path to the cottage door, and so across to the mass of foreground and bush on the right. When all is perfectly dry, make the second gradation of power in tint, and wash over the lower portion of the trees close to the cottage, with the space before washed in, observing not to let it approach the edges of the previously washed tint, lest the shapes should appear harsh, particularly on the bush opposed to the light horizon. It must be observed, that the power which was required to separate masses in outline, ceases to be proper on the application of tint, as there is no decided outline in nature. With the tint of the second gradation, wash in the door, the window, the shade of the roof with its shadow, and the shade side of the chimney. Then, with the third gradation of power, wash in the foreground and the lower part of the bush, with the precautions before mentioned. When dry, place the drawing at a due distance, according to its size; and observe, if the effect be that of a cottage in a mass of light, that the gable end cannot properly receive the same degree of illumination as the roof and the side where the window is; it will therefore be proper to wash over it a tint that will keep it in its place. The student must reflect, that, as the light is concentrated, by the illumination from the right being poured upon the cottage, its relieving mass of half-tint will be lighter than on other occasions; therefore a tint lighter than the clouds will be sufficient to detach it from the brighter side, without destroying the mass of light in which the cottage is placed. As in the case of the preceding subject, any repetition of wash or touch that may seem to be required should be added, being careful to preserve the intended effect. A little practice will teach that the trees should be diversified with tender tints, so as not to destroy the mass of light; that the distant sea should be washed with a tint to relieve it from the horizon; that the ground on which the cottage stands may be broken or enriched with characteristic forms; and that the foreground may be touched with a power that shall judiciously detach it from the second plan.

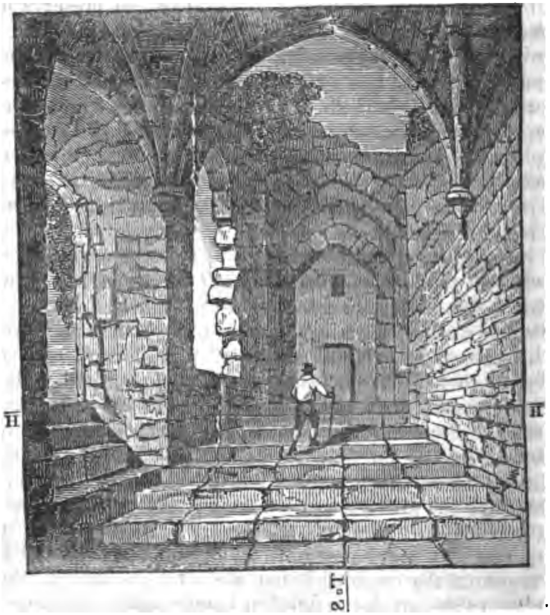
The study of breadths of light and shade will instruct the student in those principles by which such effects may be produced. It will effectually teach that simplicity possesses a charm to render a subject intelligible, and that a number of scattered lights, shades, and touches, are productive of confusion. Therefore, in the examinations of drawings, during the progress of retouching, if a part appear too light, or another part too dark, so as to produce the effect of *spottiness*, cover such part with the fingers, and imagine the appearance with any proposed alteration; if an improvement be suggested, at once adopt it, and examine again; always paying attention to preservation of the masses, on which both simplicity and effect depend. It has often been remarked, after the eye and the mind have been engaged on a drawing for some time, that they do not detect faults, which, on a subsequent inspection, instantly become observable. This generally happens when the drawing has been kept too near the eye, while the tints and touches were applied; a practice which almost ensures an inconsistency in the effects of the various parts of a drawing. If the sketch be removed to a greater distance, and viewed under a variety of lights, while the judgment is carefully exercised upon it, the faults in question will probably be detected at once. While undergoing this critical revision, a drawing should be ascertained to have *one principal light*, while the subordinate lights diminish in brilliancy, in proportion as they are removed from the principal. Masses of shade should decrease in power of tint, conformable to their degrees of remoteness. These are essential to keeping and effect. Making-out, or marking, more than the respective distances require; touches, which are inappropriate; or harshness of any description, are all departures from the principles of the art, and deviations from natural appearances. Although effects may be observed in nature at variance with these rules, such, for instance, as light scattered equally on the foreground and the mid-distance, or the whole scene being beneath a glare of sunshine, or in shade by the clouded state of the atmosphere; yet these are effects unsuited for pictorial delineation, because they are deficient in what constitutes beauty and attraction in the art.

The student will have observed how essential a sky is in giving effect to a drawing. The great variety of forms, lights, half-tints, and shades, the storm, the distant falling shower, and other incidental effects, which the atmosphere presents to the view, should always be regarded with attention, not only because advantage may be taken of such diversity for powerful contrast, but because a well-arranged sky is a beautiful portion of a landscape. The repetition of tender washes over each other may be justified only in the endeavour to obtain that tenderness and delicacy of tints which are conducive to faithful representation of clouds; for continuing to wash the same tint in successive applications, will produce an effect that is termed *woolly*, from its being deficient in that *sharpness* or spirit which is obtained by a few decided tints applied in just gradations. These varieties may be adapted to the nature of the scene, and may, by their judicious contrasts of form and tint, contribute very materially to the general effect of a subject, as in a stormy sky, bright horizons, and beams of light. The effect of moonlight may readily be given by strong tints, softened off in the circular direction of the moon, and repeated till the gradation is obtained; then give a wash over the whole sky. *Take out* the clouds to a half-tint by dabbing, and *take out* the moon to the clean paper, with crumbs of bread. A few catching lights on the clouds near the moon may be *taken out*, but made less bright than the moon.

If a subject be undertaken of a large size, the washing in of broad spaces will be facilitated if the surface of the paper be damped with a sponge and water just before washing in the tint; this, by preventing the quick absorption, contributes to the smoothness or evenness of a tint. If, after the broad tints are washed in, there appear to be an unequal distribution, sponging may be resorted to; but it must be remembered, that, where a tint is required to be given in its clearness, it can never be produced so well as by a clean tint properly distributed on the uninjured surface of the best drawing-paper.

Fig. 30 is intended to illustrate the perspective of buildings when near the spectator, and the effect of light and shade under such a circumstance. The horizontal line is assumed at

Fig. 30.



2-7ths of the height of the subject, and the station is taken to the right of the centre, that the larger space may be given to the more interesting side of the building. The steps and the recesses of the windows are parallel to the base, and all the other lines terminate in the point of sight on the ascent of the sixth step. The student is recommended to observe, that when such a scene is studied from nature, nothing can excuse inattention to outline, and nothing palliate neglect of perspective. The degree of light and shade to be given to such a subject may be suggested by the particular state of the atmosphere, the hour of the day, or other accidental circumstances at the time when the sketch is taken; but, if no impressions have been left on the mind to dictate any peculiar treatment, something like the effect of Fig. 30 may be produced, in which the principal light is from the window, near the centre of the subject; to preserve it so, the opening at the top is subdued with a graduated tint, and the nearest aperture is rendered subordinate by the introduction of light foliage. The perpendiculars of the steps are in half-tint, and the wall opposite to the windows is reduced to unobtrusiveness, by the marking of the stonework, and a light tint. The strength of the masses of shade is increased as the foreground is approached, and the lightness of touch is regulated by the degree of remoteness to which it is applied.

Suppose a scene similar to this to have been sketched, and copied from the sketch-book, with sixteen or eighteen inches for its base, upon the drawing-board, with a due attention to outline and perspective: Prepare a hair-pencil, by burning off its fine point in the flame of a piece of lighted paper; with this, in a tint of the first gradation, let the markings of the stonework be drawn in entirely by the hand; no straight-edge nor compasses are now to be used. A little care will be required to prevent the drawing from bearing the appearance of having been ruled; this may be prevented by breaking and spotting occasionally, in agreement with the forms, and by observing to keep all the edges of those parts which project towards the light, less powerfully expressed than the others in shade. When these are dry, make a light tint, only sufficiently powerful to subdue the subordinate lights, or merely a remove from white; and with a flat pencil wash over the whole subject, except the high light on the aperture near the centre; by this the principal light will have been determined. When the wash has become dry, make a tint, which, whatever power be taken, must be considered the first gradation; remembering, that, if too strong, the effect will be harsh; if too feeble, it will be insipid: with this, wash in all the parts which are not fronting the light, such as the perpendiculars of the steps, the broken recesses of the windows, and all the darker parts, of course: this will give the half-tint of the subject. Then, with the second gradation of tint, wash in the roof and shade-sides of the supports, and retouch where an increase of power is required; observing to keep the part between the windows less powerful, to prevent it from becoming too obtrusive between the principal and subordinate lights. Then, with the third gradation of tint, wash in those parts which are most in shade, with attention to the preservation of distances, so that the greatest strength is on the support in front on the left; the next degree of strength on the roof most opposed to the light, and the third degree of strength on the angle on the left beyond the steps. The washing-in of these tints, which determine the light and shade of the subject, should be arranged in their repetitions, so that the edges of each tint may be seen; it is a style which implies a perfect knowledge of the effect proposed at the outset, and is full of spirit and character. However, till the student can by practice dispense with labour, and banish the appearance of it, he must proceed to repeat washes where they may be required, and then retouch the characteristic markings, so as to give a spirit consistent with the keeping of the subject.

In such studies, the student will learn to appreciate the rounded point of the pencil, which is so well calculated to give firmness and decision, and he will also be apt to acquire the freedom of touch and power of effect, which the use of such a pencil rarely fails to confer. As to the exact degree of obtuseness to which he should bring his pencil, it is difficult to lay down rules: in this, as in many other matters, he must exercise his discretion, the whole object being gained if he only produces the desired results, in the character and effect of his drawing.

The art of washing in tints is presumed to have been acquired before the student has advanced to this part of his course. It will therefore be well if he occasionally refer to the characters of foliage, and with the pointless pencil practise the expression of each in the various gradations of tints. Suppose a tree to form part of a subject, and that its character is required to be shown, let the predominating masses be sketched slightly; then mark the supporting stems, the projecting branches, and those which extend laterally; next slightly indicate the smaller masses as they incline to either side, upwards, or downwards. Examine the whole when sketched; see that all have been disposed naturally, that the smaller divisions appear free, and that the general effect of the outline is graceful. Rigid adherence to the form of a tree is never exacted; but a tree in a drawing is always expected to excite ideas of a pleasing nature: it is therefore incumbent on the student to observe the freedom and luxuriance of nature in the disposition of foliage, as well as the degrees of illumination which the different parts receive.

Whatever may be the power of tint required, make a few trials of the character on a piece of waste paper with different pencils, for with the same action they will produce very different appearances on the paper; for instance, a swan-quilled pencil with a fine point, if moved in the manner by which the small writing *w*'s are made, will describe a character like the angular or serrated indications of the oak; a pencil with a burnt or worn point, if moved in the same manner, will describe a character more smooth and round, like the elm. When the character and tint have been determined, commence where the forms can be communicated with the greatest ease, which is generally on the right; observe the inclinations of the boughs in the sketch, and turn the drawing in any direction by which the same expression of character may be given with equal facility. Where the branches project on the sky, let the pencil be nearly exhausted, or adopt a weaker tint; in this manner proceed until all the half-tint be covered. Then observe if the tree be of a circular form, or such as to require light, shade, and reflected light; in which case repeat the adopted characteristic markings on the shade-side of its masses or branches. If the tree be such as to admit of the branches of the opposite side being seen through the openings in front, let those markings be tenderly expressed, with attention to their inclinations. Then, respecting the masses of light, the same ideas which regulated the lead-pencil sketches at Figures 26 and 27, may here be pursued, by markings which show a kind of centre whence they have extended towards the boundaries. When all the parts shall have been thus arranged, consider the situation of the tree, and the degree of light or of half-tint it should have, as forming part of the general effect of the drawing, and tint it with the power required. In this state it may remain until all the other tints shall have been washed in, and the drawing placed farther off for critical inspection. The tree will now be seen as a part of the landscape; where it is too feeble, strengthen it by repeating the characteristic markings; where it is too strong, *take-out* carefully; where the markings may appear too formal, destroy that appearance by dotting between, or by waving over the markings with proper power of tints. This process may be continued till a considerable degree of finish be communicated, remembering that the portion be given to each plan, which is consistent with its situation in the landscape.

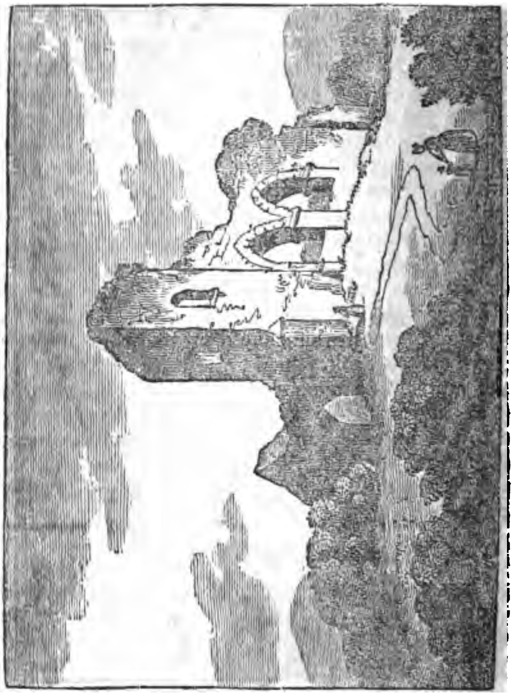
It must on all occasions be remembered that the *appearance of labour* should be avoided; and, therefore, the simplest means by which the desired effect can be produced is the best. The power to accomplish this is acquired by observing natural objects under the various effects of light and shade. The value of such intercourse with existing objects is admitted, but its real amount is never known by a student, until he has proved it by experience. An anecdote in point may be here related:—A young lady, supposed to possess considerable ability, had produced drawings which were much admired, for she had assiduously copied numerous prints and drawings, so as to be enabled to present a large portfolio for the amusement of her friends. One of these requested as a favour that she would make a drawing to illustrate a particular occurrence. The subject was a common stile with a foot-step, and a bramble projecting over the upper rail, on which was to be suspended a handkerchief. It seems that, in crossing this stile, which separated two fields, the bramble had caught the handkerchief, and the heedless bearer passed on without it; the contents of a letter which was folded in the handkerchief were of importance to the friend who was anxious to possess the drawing. The young lady accordingly proceeded to work; but before the drawing was presented, an artist was favoured with a sight of it. He complimented her care in the finish; then mildly pointed out a little error in perspective, and another little mistake in the light and shade. She listened, thanked him, and resolved to subject her drawing to a test of a different kind. Having ascertained the situation of the real scene from her friend, who had hitherto only described it, she proceeded thither, and, taking her place before the stile, caused a bramble to be projected as she imagined it to have been on the late occasion. Then comparing her drawing with what she saw, she was astonished at the deviations from simplicity and truth, of which she had been guilty. From that time taste and judgment became more evident in her drawings than the high finish on which she had previously relied. It may be said to every student, "go and do likewise," and the results will be similar. After a little knowledge of outline and perspective, with the use of the pencil in tints, what should prevent the student from taking the sketch-book, pencils, and cake of tint, with two phials of water, and a plate for a palette, to copy, in the groves, or in the fields, some of the countless objects presented to the inquirer after truth? By such a course, he would learn more of the value of perspective, and become better skilled in outlines and tints, than is possible by any other means.

STYLES AND MODES OF TREATMENT.

Drawings of natural scenery may be executed in different styles and modes of treatment, and may be agreeably varied, according to effects produced by the sun's light and other atmospheric influences. These transitory effects, as already mentioned, are very valuable in drawing, and should be noted down in the sketch-book, either for present or subsequent use. Examples of three opposite effects and modes of treatment are given in Figures 31, 32, and 33; the scene being an old abbey, and the station of the draughtsman in each case the same. The outline is sketched according to the directions previously given, as simply as possible, without any markings which are not essential to form or character.

In Fig. 31, the shades are given with a few light tints, the power being confined to the foreground, which has the effect of directing the eye to the principal in a breadth of light illumined by the morning sun from the right. The treatment of such a simple subject, in order to produce a happy effect, ought to be in agreement with the calm and bright character of the scene.

Fig. 31.



MORNING.

Fig. 32 represents the abbey partially illuminated, the broad shadows being occasioned by a stormy atmosphere; a gleam of sunshine is therefore thrown on the upper portion of the building; and to prevent the chief light from becoming an isolated spot, a few subordinate lights are cast on the ground in two places, and a little in the sky; these lights also sustain the principal, and preserve an agreement with natural, though accidental, effect. Such a mode of treatment, as exhibiting a more complicated style, would be esteemed superior to that of the preceding sketch.

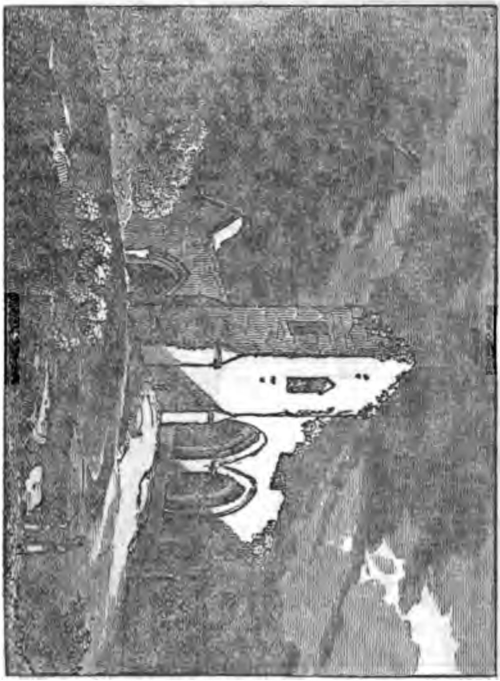


Fig. 32.

STORMY.

Fig. 33 represents the abbey in a breadth of half-tint and shade, as opposed to the bright glow of the setting sun, which, without disturbing the mass, glances on a few projections, and causes a reflected light on the ground, which breaks the monotony that would otherwise predominate.

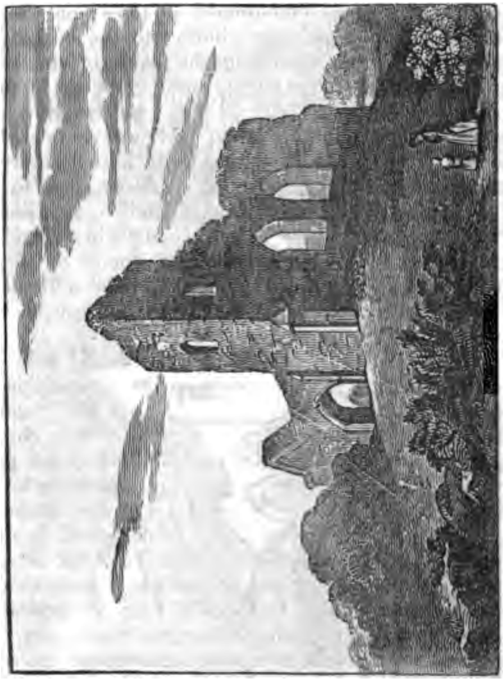


Fig. 33.

EVENING.

The treatment of the subject in this manner would exhibit a dependence on boldness of opposition, and would be appreciated in proportion to the ideas which might be excited of the calm grandeur of the scene.

The difference of treatment exemplified in these several effects, is not more striking than that which may be produced in landscape composition, by the taste or judgment of the artist. The piece may be delineated in a formal, a picturesque, or a beautiful style. For instance, suppose a scene to consist of a rustic bridge, beneath the arch of which a rivulet murmurs along its pebbly bed; above and beyond the bridge, on the opposite side of the river, a cottage embosomed in trees; on the near side, a road or broad pathway winding to the bridge; and numerous wild plants enriching the bank of the rivulet and the foreground. This simple rural scene can be drawn with such minute attention to all the regular forms, as to excite an idea that the workmen had just completed the buildings. The trees can be drawn with formal observance of stem and foliage; the water can be drawn so as to seem flowing along; the banks represented smooth, as if recently mowed; the pathway neatly swept, and all in a breadth of light, or rather as if the light operated equally on all parts of the subject. This would be acknowledged a likeness of the spot, but at the same time it would be considered as extremely tame and insipid.

The same scene could be drawn in a free and bold style, without descending to the use of so much precision and minuteness. The trees could be drawn as if gently agitated by the wind, and the smoke from the cottage chimney passing amid the foliage. A ray of light could illume part of the bridge and the cottage, in a pleasing breadth and form, which could be relieved by a deep-toned hill in the rear; the pathway and the banks could be drawn with a wild intricacy; the rivulet could be given as sparkling amid the stones, over and around which it meandered; and the foreground could be touched with abruptness and spirit, corresponding with the character of the subject. This also would be recognised as a representation of the scene; but the infusion of what might be termed the picturesque, would excite attention and produce applause.

The same scene could be drawn with a graceful sweep of line, and contrast of light and shade, interesting from its truth and beauty. The trees could be luxuriantly projecting their branches over the cottage; the rivulet could be gently winding along, reflecting the bridge and objects above; the sky could be serene, enlivened by fleecy clouds; the banks could be enriched with plants of the showy kind, in conformity with the scene; the pathway could be graced with groups of elegant females and their companions enjoying a rural walk; the whole could be adorned with accessories so judiciously arranged as to cast a charm over the scene, giving to it that variety which causes the eye to pass from object to object with increasing delight. This scene would also be recognised as faithful; but its representation of any particular spot would be forgotten amid the assemblage of pleasurable sensations which the characteristics of the beautiful would excite in the mind of a spectator. These examples of the various styles may assist in impressing upon the mind of the student how much will depend on taste and judgment in representing the most commonplace view from nature.*

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* Mr Hay, in his work on Harmonious Colouring, from which we have already presented a quotation, mentions, for the benefit of those young mechanics who are studying ornamental design with a regard to their professions, that, after becoming acquainted with the principles of perspective and light and shade, attention should be directed to the study of the best examples of ancient and modern ornament that can be procured. "But flowers," he proceeds to say, "are your best practice, as you will now have obtained freedom of execution. To those who have gained a facility in copying the beautiful forms which prevail in the vegetable kingdom, and who have had such instructions in the use of water-colours as may enable them to copy individual flowers with ease, I would recommend the acquirement of a thorough knowledge of the laws of harmonious colouring. They will then be able to group and arrange flowers in the most agreeable and effective manner in regard to colour, as their previous experience must have taught them to accomplish in combination of form.

Dr Ure says, that 'the modes in which taste is cultivated at Lyons deserve particular study and imitation in this country. Among the weavers of the place, the children, and all persons busied in devising patterns, much attention is devoted to every thing in any way connected with the beautiful, either in figure or colour. Weavers may be seen in their holiday leisure gathering flowers, and grouping them in the most engaging combinations. They are continually suggesting new designs to their employers, and are thus the fruitful source of elegant patterns.' Hence the French flower patterns are remarkably free from incongruities, being copied from nature with scientific precision.

All these facilities for the improvement of our fancy manufactures are within the reach of the most humble. The pursuit of such a course of study as I have endeavoured to point out, would not only augment their sources of innocent pleasure, but lead them to other instructive pursuits. The youth, in searching for the most graceful and picturesque plants in nature's most profuse and wildest productions, would be naturally led to commence the study of botany; for he would then have some interest in the inquiry. And it may be easily imagined with what avidity the more advanced would add to his knowledge of that pleasing science, or the gratification he would derive from the study and practice of horticulture.

I need scarcely point out the advantages to be derived from the cultivation of

FIGURES.

A knowledge of drawing the human figure is to be gained by a careful study of the outlines of the different parts composing the trunk, limbs, and members. All such integral portions of the human figure, if time and other circumstances permit, may be first studied from casts conveniently placed on the table, so as to give a facility to the hand in this department of sketching.* It must, however, be borne in mind, that exercises of this nature, under the guidance of a master, do not obviate the necessity for studying the human figure from life; neither do they supersede the acquisition of a knowledge of figure-drawing on a small scale, for the purpose of ornamenting and giving effect to a scene from nature. The introduction of human figures is of considerable utility in drawing a landscape, in order to serve as a scale by which a spectator may know the probable measurements of objects near which the figures are situated; figures also give animation to a scene, and, by the touches of light or of dark which they justifiably offer, communicate valuable relief to a mass, or assist in the keeping of the subject. For an example of these uses and effects, we refer to Figures 30, 31, 32,

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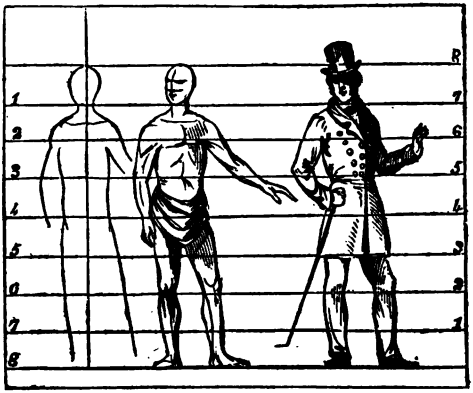
flowers by those engaged in designing ornamental patterns. The productions of a well-managed flower-garden to such would be, in my opinion, of more real utility, as objects of study, than the contents of the Louvre. In those productions of nature they will find the most exquisite beauty and elegance of form, and, even in single flowers, the most perfect combinations of colouring.

In saying that the study of such subjects is of more utility to the ornamental designer than that of those great works of art which have been the admiration of ages, I do not mean to undervalue the benefit that any one, and especially the artist, may derive from studying works of this description. I am aware that 'the eye has its principle of correspondence with what is just, beautiful, and elegant, and that it acquires, like the ear, an habitual delicacy, and answers, with the same provisions, to the finest impressions. Being therefore versed in the works of the best masters, it soon learns to distinguish true impressions from false, and grace from affectation.' I have therefore not the least doubt, that those who have risen to some degree of eminence as ornamental designers, would reap great benefit in attaining a knowledge of the various styles and subtleties of colouring, by carefully studying and copying, in masses of colour alone, the best works of art to which they can get access, and applying these arrangements to the particular figures of their patterns."

* Stucco casts of figures and their subordinate parts may be had from different manufacturers of models of this description in London, Edinburgh, and other large towns.

33, and 36, in all which, human figures are introduced. Fig. 34 conveys a sufficient knowledge of a mode of sketching the human figure for purposes of this description.

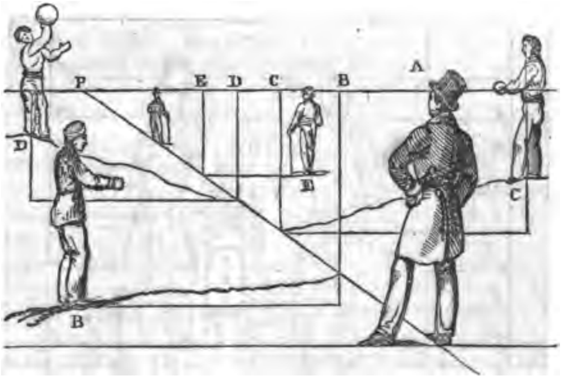
Fig. 34.



The height of a figure is eight times that of its head; half its height is at the lower part of the body; a quarter of its height is at the knee. This division of the human figure can readily be put on the memory by the following method: Draw a perpendicular line, then divide it into eight equal parts; give one for the head, and, placing dots at each part in succession, give a second part for the breast, a third part for the centre of the abdomen, a fourth part for the lower portion of the body, a fifth part for the midway of the thigh, a sixth part just beneath the knee, a seventh part just beneath the calf of the leg, and the eighth part to the sole of the foot. The shoulders are two heads in width; the elbow is a head and a half from the shoulder; and the arm, with straightened fingers, is three heads and a half from the shoulder; that is, the fingers will reach down to the fifth division of the perpendicular. The measurements of the human figure, according to the highest standards of art, are exceedingly minute; but such are not necessary where a mere sketch of the form is required to enliven a landscape.

Fig. 35 exhibits the mode of ascertaining the heights of figures, wherever they may be placed in a scene, according to the rules of perspective. A is a figure on the base line;

Fig. 35.



the eyes determine the height of the horizontal line H. Draw the visual rays from the head and feet of the figure A to the point of sight P, and the receding diminutions are determined, supposing the space to be a level surface. Where the situation of a figure is below the visual rays, as B, draw a parallel line from the feet of the figure towards the ray, and raise the perpendicular line B. Now, the measurement between the visual rays at B is the height of the figure required. When the situations of figures are above the rays, as at C and D, draw the parallels and the perpendiculars to their intersections beneath the elevations, and the measurements between the visual rays at C and D will give the respective heights of the figures required. The figure E being on a level with the base, a parallel line drawn from the lower ray will determine the height of a figure so situated.

ARRANGEMENT AND EFFECT.

The following subject is introduced for the purpose of finally directing attention to an arrangement of the respective parts in a landscape, so as to produce a combined effect.

The investigation of such, a picture may tend to awaken ideas of combinations, oppositions, and contrasts, which are valuable in drawing, and lead the mind to observe them as they exist in nature.

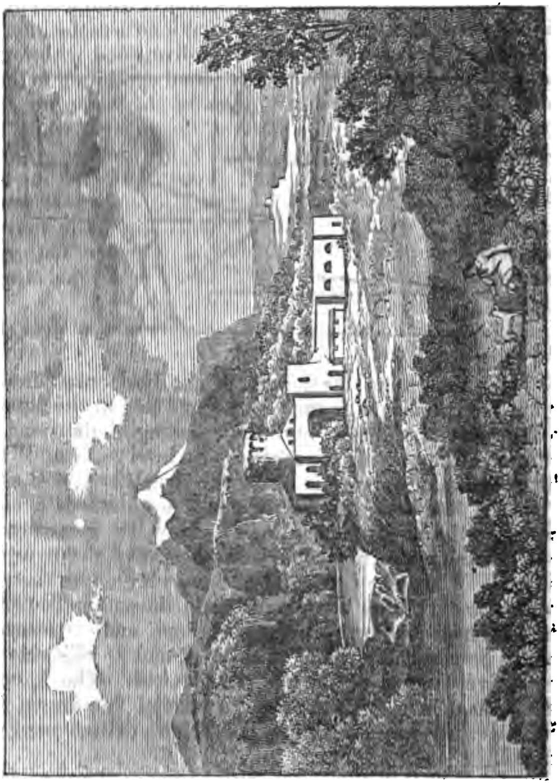


Fig. 35.

The drawing of this subject is judiciously varied and pleasingly contrasted. The perpendicular and horizontal lines of the buildings are increased in their respective effects, by being unlike the circular and angular forms of the trees and the precipices; they also exhibit a contrast of smoothness to roughness. The hills in the distance are opposed to the level grounds beneath, and, by the introduction of a mountain, the subject assumes a pyramidical form, with a variety of line that increases the interest of the scene. The middle ground is diversified with forms that contribute to give the most effectual opposition to those more remote. The horizontal lines of the water are contrasted by the clustering forms of the foliage, while the bolder and angular forms assumed by broken grounds covered with plants, conspire to prove that the outline had been studied with attention by Poussin, from whose works it is selected for the sake of example. The scene may or may not have been presented to his eye; but nature is nowhere outraged; and the lines have been assembled with judgment, and with attention to the rules of art.

On investigating the light and shade of this subject, the student will perceive that the principal light is thrown on the building, so as to determine a striking principal. The subordinate lights are scattered on the ground, on the fall of water, on the summit of the mountain, on the rocks beneath, and on a small portion in the distance. These both enliven and detach the parts with due regard to the appearances of nature, and thus give great value to the chief light, by judiciously spreading its harmonising assistants. A depth of tone is given to the ground as it descends to the water, across which it is spread, becoming lighter as it advances to the front. This mass of shade has an effect that casts off the distance, and finely relieves the principal light; a portion of this shade is consistently continued along the bank, thereby detaching and giving increased interest to the varied lights surrounding the chief, and connecting the breadth of shade by skilful gradations with the power of the foreground. The tones, beyond the principal object, are arranged in such manner as to give value to each other; here and there receiving touches of light and shade, consistent with their degree of distance, and in strict conformity with beautiful nature and the principles of imitative art.

The effect of this scene is that of elegant simplicity, being a mixture of the rural and the beautiful, which never fails to excite a calm gratification. The rural and the beautiful form, perhaps, that assemblage which the student most probably will feel the greatest pleasure in studying, and from which the greatest degree of satisfaction may be derived in the pursuit of landscape drawing.

It may be proper to state, that, in selecting scenes from nature, the expanse of vision, or sixty degrees, will often include more of the scenery surrounding an object than is required. On such occasions the boundary lines may be placed at pleasure, or so as to give the best effect to the principal. When a more expansive view is required to be taken than is contained within sixty degrees, the station becomes a pivot from which a succession of sketches, each sixty degrees of expanse, are to be taken. Thus any portion, or the whole circle, may be completed, forming what is termed a PANORAMA; always remembering that the points of sight and vanishing points are on the same horizontal line. Foregrounds may be added at pleasure; yet they should be consistent with the scene, and such as might have been on the spot. A foreground must ever be more or less imaginary, because the space between the objects which compose the scene, and the spectator, cannot be otherwise filled up. A human figure, should there be one very near, would appear as high as the horizontal line, and the lower extremities would be hidden; such unseemly representations are avoided, by supposing that the scene is viewed through a cavity in the side of a room, or a frame, which is the plane of the picture.

Large drawings require a bold treatment suited to the distance whence they are to be viewed, but the dimensions of a drawing give it no additional claim to notice. The situation in which a drawing is seen to the greatest advantage is, when its horizontal line is immediately in front of the spectator's eye, and at such a distance that the whole can be seen without requiring the head to be moved. The beauty of linear perspective, more particularly in complicated architectural subjects, can only be seen to perfection from one point, and that is through an aperture immediately in front of the point of sight. The eye being placed close to an opening, in a card for instance, and at such a distance as to embrace the whole subject, every line then becomes adjusted to the vision, and the diminution of surface in the drawing contributes to the truth of the effect, according to the appearances in nature.

The pupil has now been carried by easy gradations through the various elementary departments of perspective and drawing, as far as the use of black-lead pencils and simple tints are concerned. Few, besides professional persons, proceed further; but for those who are anxious to do so, there are many excellent manuals of instruction.

THE END.

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